European Commission

Exchange of Verifiable Credentials with EBSI
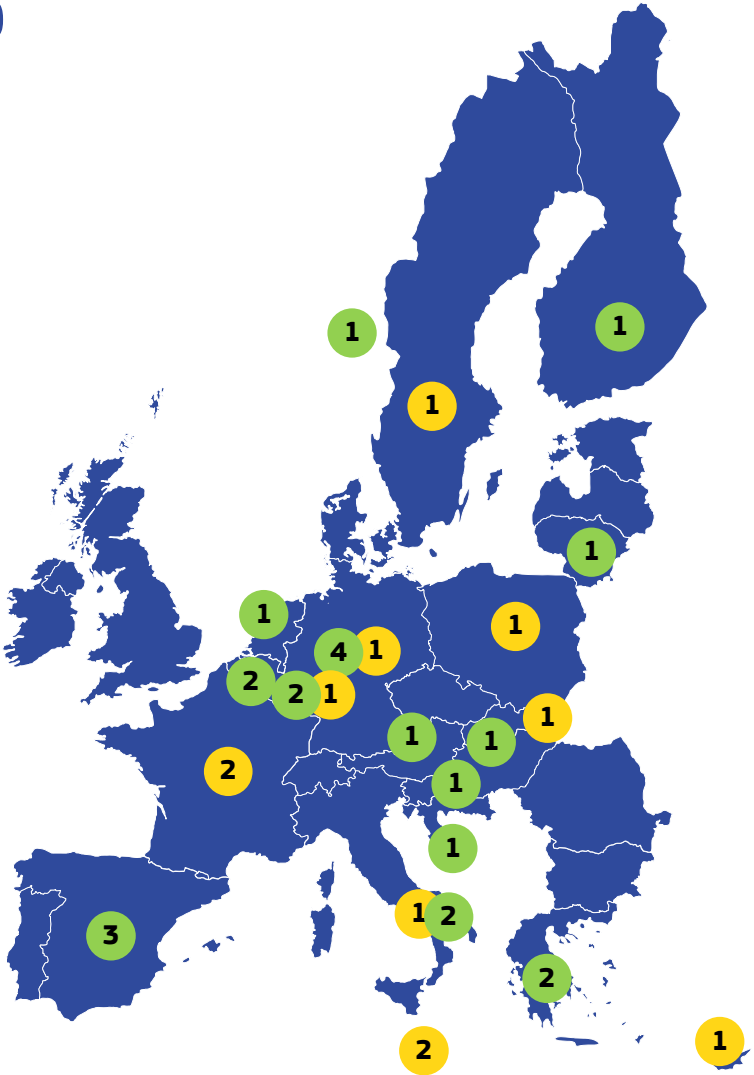
25/10/2021

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DG CNECT

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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.
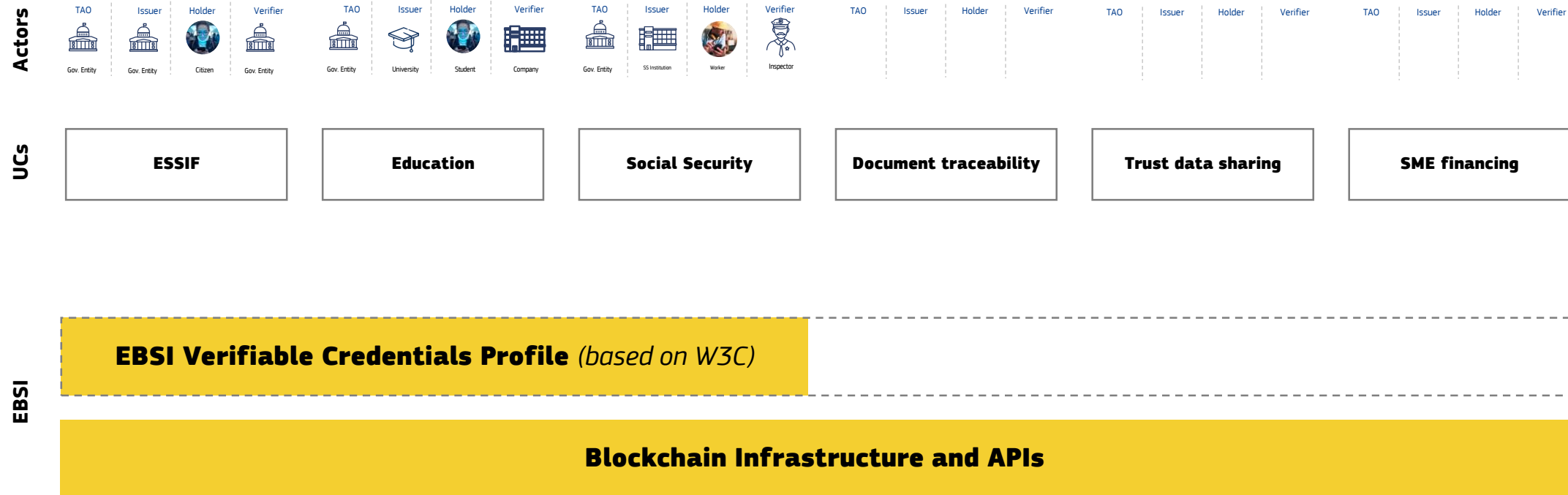
Having this opportunity in mind, the EBSI (European Blockchain Services Infrastructure) has been developed. Our vision is to accelerate the creation of cross-border services and put blockchain at the service of public administrations for the purpose of verifying information, making the services trustworthy.

EBSI is the first EU-wide blockchain infrastructure, driven by the public sector, in full respect of European values and regulations. EBSI is supported by 29 countries (All EU Member States, Norway and Lichtenstein) and the EC forming the European Blockchain Partnership (EBP).

What is EBSI today?

EBSI is user centric, decentralised and reusable in multiple contexts and use cases. It is based on open standards to stimulate interoperability and the creation of cross-border public services

Actors

TAO	Issuer	Holder	Verifier	TAO	Issuer	Holder	Verifier	TAO	Issuer	Holder	Verifier	TAO	Issuer	Holder	Verifier	TAO	Issuer	Holder	Verifier	TAO	Issuer	Holder	Verifier
Gov. Entity	Gov. Entity	Citizen	Gov. Entity	Gov. Entity	University	Student	Company	Gov. Entity	SS Institution	Worker	Inspector												

UCs

ESSIF	Education	Social Security	Document traceability	Trust data sharing	SME financing

EBSI

EBSI Verifiable Credentials Profile *(based on W3C)*

Blockchain Infrastructure and APIs

EBSI has now **38 nodes** in **21 countries**

A ready-to-use infrastructure

Overview on the work that has been done so far

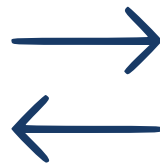| Q1 2020	Q3 2020	Q1/Q2 2021	from 2022

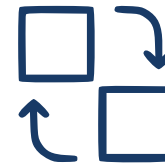**EBSI V1**

Basic blockchain infrastructure and a user web wallet

Preparing for EBSI engagement

First approach and guidance to users for future exploitation of EBSI

EBSI V2 Pre-production

EBSI v2 capabilities deployed to the pre-production environment. **Early Adopters** on EBSI v2 pre-production

EBSI V2 Production

New capabilities will be deployed to the production environment.

DIGITAL WALLET

Not just a folder...

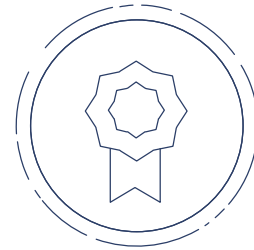Allows to securely store
verifiable credentials

a new paradigm…

Verifiable CREDENTIALS

Impossible to fake, easy to verify

✓ **High level of certainty that the issuer is trusted alongside the time of issuance**

✓ **High level of certainty that the holder is the one that the Verifiable Credential was issued to**

✓ **The holder keeps data control and ownership**

EBSI understands the importance of...

STANDARDS

If everyone goes for a different standard or creates their own spec the wallet providers would have to bear the costs or a single dominant player will emerge
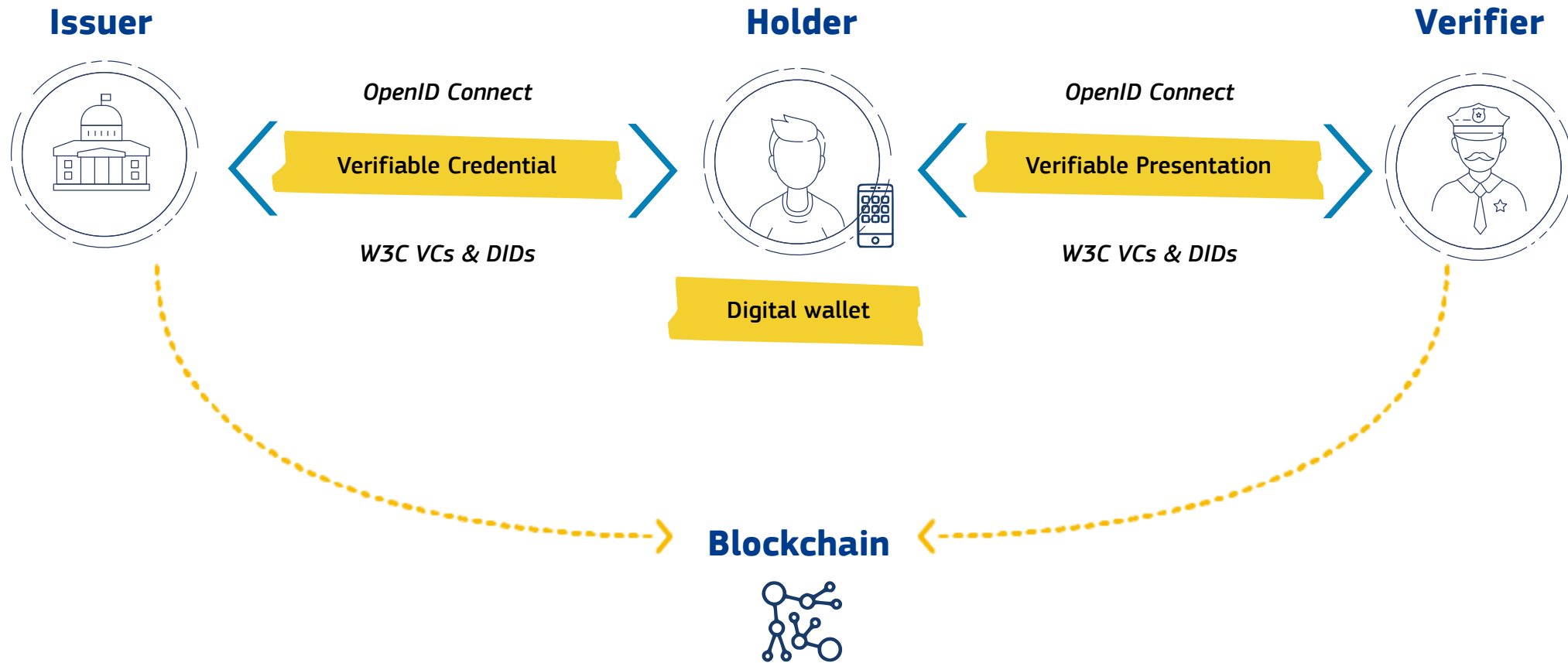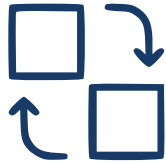
✓ W3C VCs & DIDs

✓ OpenID Connect

How it works

Issuer — Holder — Verifier

OpenID Connect
Verifiable Credential
W3C VCs & DIDs

Digital wallet

OpenID Connect
Verifiable Presentation
W3C VCs & DIDs

Blockchain

EBSI supports Early Adopters

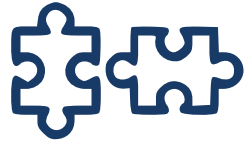What are the services we provide to support to the Early Adopters?

Current focus on digital credential

EBSI's Verifiable Credentials Lifecycle for Early Adopters

Navigating EBSI's Verifiable Credentials Profile

Verifiable Credentials Lifecycle - Blockchain Internal - CEF Digital (europa.eu)

EBSI Verifiable Credentials Playbook for Early Adopters

Creating EBSI's Verifiable Credentials Profile

RFC - EBSI Verifiable Credentials Playbook for Early Adopters - Blockchain Internal - CEF Digital (europa.eu)

EBSI Wallet Conformance Testing for Early Adopters

Checking the conformance of your wallet to EBSI

Coming soon

Simple Conformance Testing covering the whole lifecycle

Lifecycle based on W3C specifications

01

On-boarding

02

Issuance & storage

03

Presentation & verification

On-boarding of actors (holders and issuers) supported by EBSI

- Set up wallets and create DIDs
- Registration of DIDs on EBSI
- Accreditation of issuers of VCs

Issucance and storage of Verifiable Credentials

- Request issuance of VC
- Issuance of VC
- Storage of VCs

Presentation and Verification of Verifiable Credentials

- Request Verifiable Presentation
- Share Presentation
- Verify Claims

W3C Specifications

- Not specified by W3C's spec

- Issuance of one or more VCs.
- Storage of VCs in a credential repository (such as a digital wallet).

- Composition of VPs.
- Verification of the VPs

European Commission

Early Adopters Multi-University Pilot

We are already busy implementing the vision

Will you join us?

Issuer
University (ES)

Verifier
Company (CY)