



CEF Digital
Connecting Europe

18 January 2022

EBSI Diploma Use case: the decentralized way

Bologna Thematic Peer Group B on Key Commitment 2: National legislation and procedures compliant with the Lisbon Recognition Convention

LLUÍS ARIÑO – CONVENOR AT EBP, DIPLOMA USE CASE (EBSI)

Good afternoon!

Who is your presenter?



Lluís Ariño

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Agenda

1 EBP & EBSI

Verifiable Credentials and **Blockchain** as means for the public good

2 EBSI - Diploma Use Case

Educational credentials reimaged

01

EBP & EBSI

Blockchain and verifiable credentials as means for the public good

EBSI today: a solid node network

A solid network of 38 nodes across Europe

From 30 to **40 nodes** in **22 countries**



of which 32 on V2

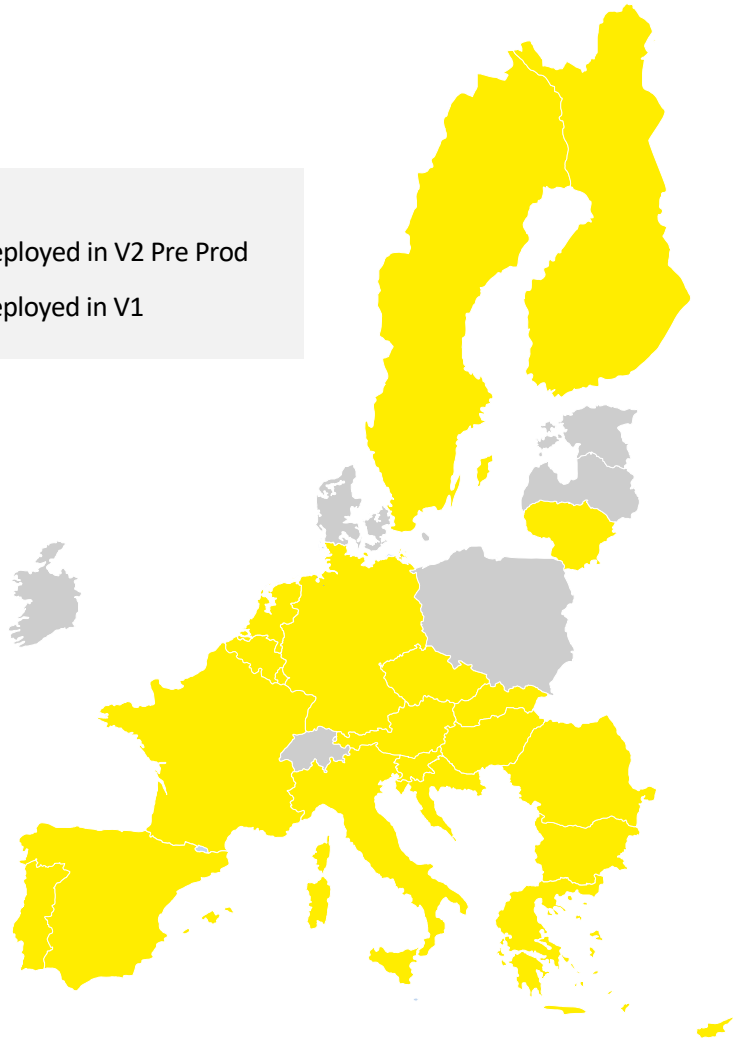
Nodes per country:

 Austria (1)	 Lithuania (1)
 <i>Belgium</i> (1)(1)	 Luxembourg (1)
 Bulgaria (2)	 Netherlands (2)
 Croatia (1)	 Norway (1)
 Cyprus (1)	 Portugal (1)
 Czechia (2)	 Romania (3)
 <i>Finland</i> (1)(1)	 Slovakia (1)
 France (1)(1)	 Slovenia (1)
 <i>Germany</i> (2)(2)	 Spain (3)
 Greece (2)	 Sweden (1)
 Hungary (1)	 EC Nodes
 <i>Italy</i> (2)(1)	

(Blue Italics are nodes on V1)

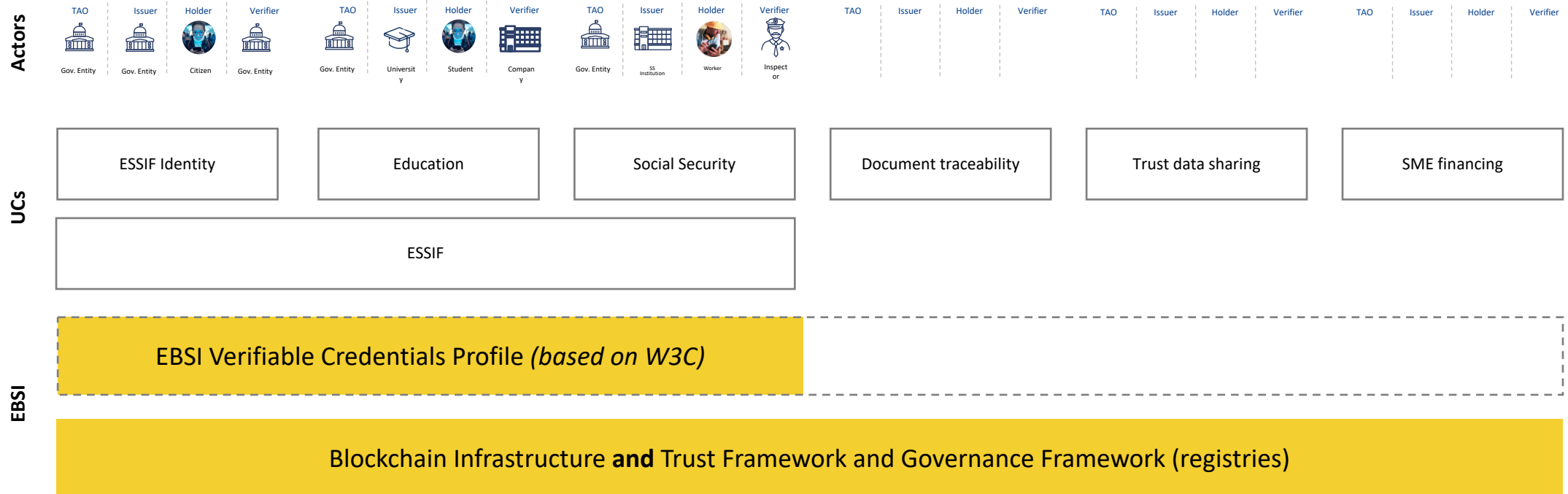
Legend

-  MS Deployed in V2 Pre Prod
-  MS Deployed in V1



What is EBSI today?

EBSI is user centric, decentralized 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



04

Diploma Use Case

Educational credentials reimaged

EBSI Diploma Use Case

Purpose and desired outcomes of the use case

Purpose

- To provide reusable specifications and services to **manage educational credentials across borders.**
- **Give control back to citizens**

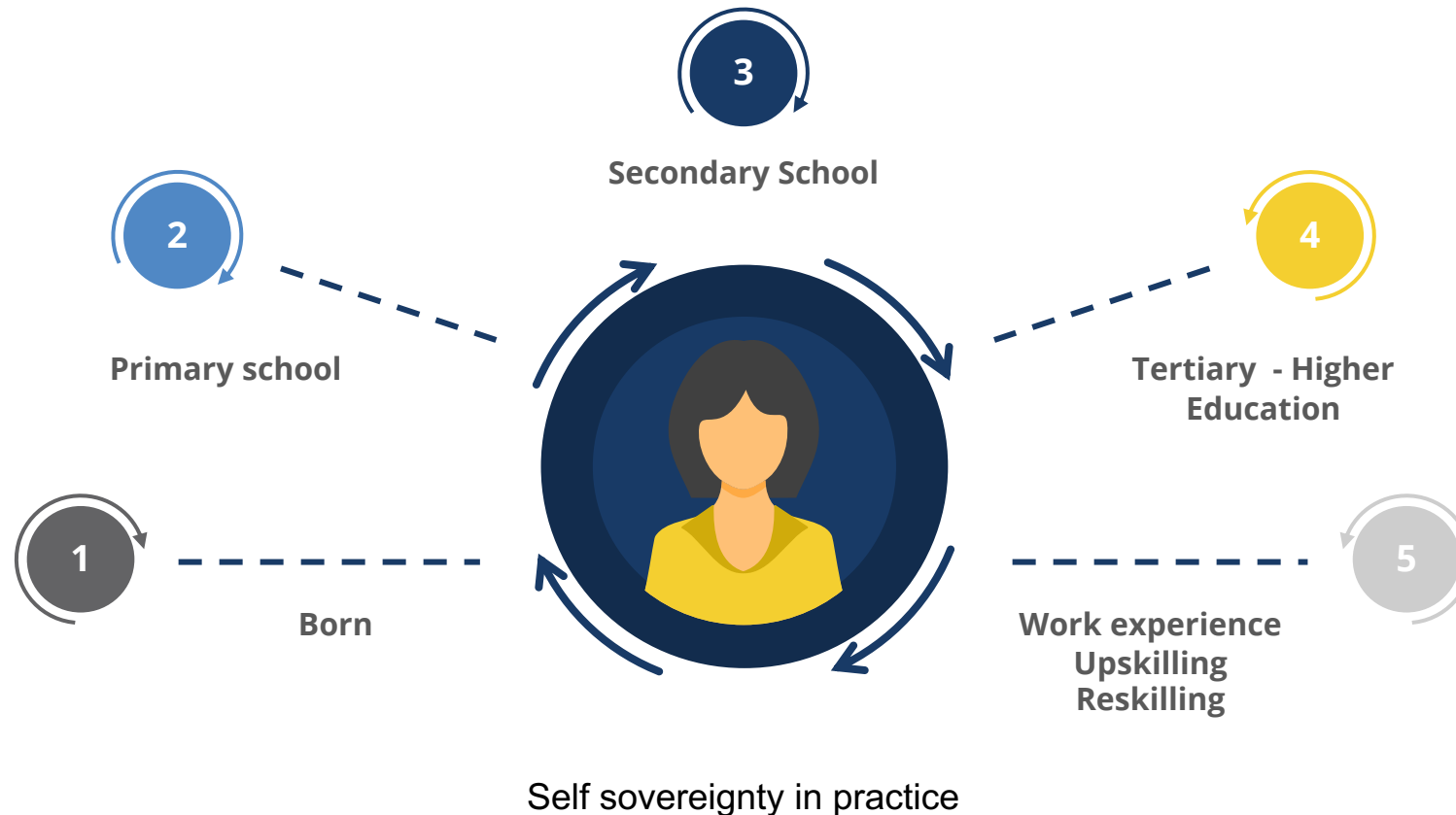
Desired Outcome

- **A common underlying building block to:** issue, manage and verify diplomas using the highest levels of security and privacy by leveraging EBSI blockchain technologies

Scope of the Diploma Use Case is all levels of Lifelong Learning

Diploma Use Case – Powering Educational Use Cases

New paradigm for education: Focusing on citizen, breaking educational SILOs, enabling LLL, PLP and stacking credentials



Aligned to:

- EU Digital Strategy
- EU Data Strategy
- EU digital credentials action plan
- EU Digital action plan
- Europass decision
- Europass Digital Credentials
- European education area
- European research area
- European universities initiative
- European skills agenda
- eIDAS trust framework
- GDPR
- Once only principle (enabling the citizen' perspective)

- Student mobility for both, identity and records, will be a reality (through Student's Mobile wallet)
- Long Life Learning will be a reality: credentials are owned, managed and controlled by the citizen
- Also, thanks to the stacking credentials feature, Personal Learning Pathways will be even easier, and it is a natural solution for micro-credentials

EBSI Diploma Use Case

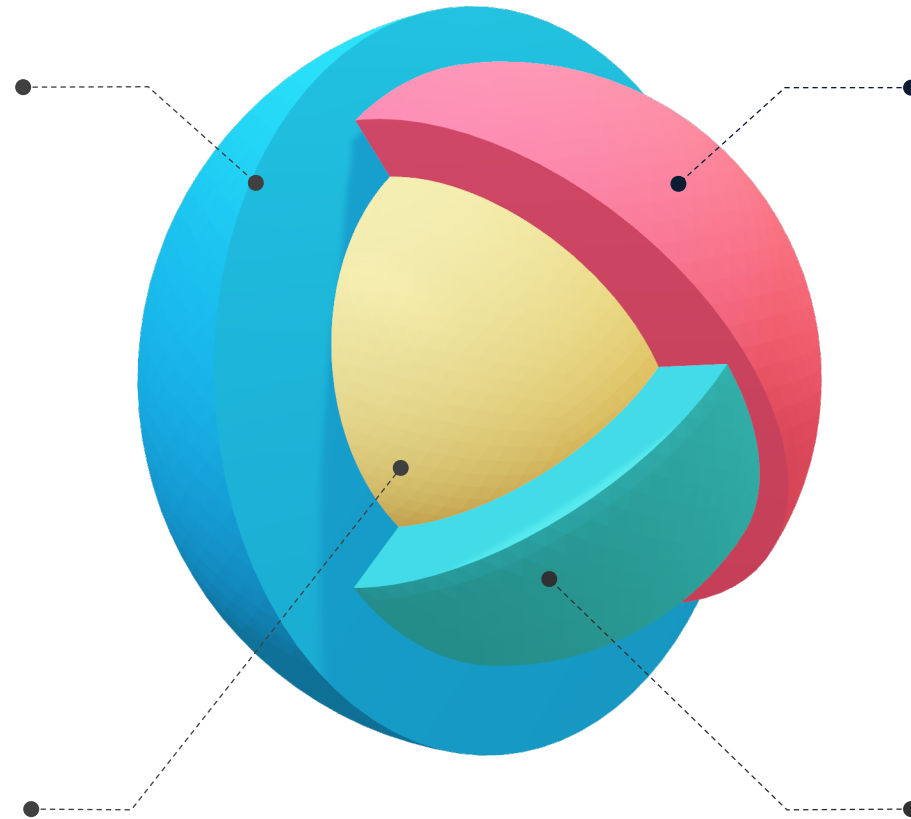
Interoperability (a key element): Dimensions

Organizational

Legal

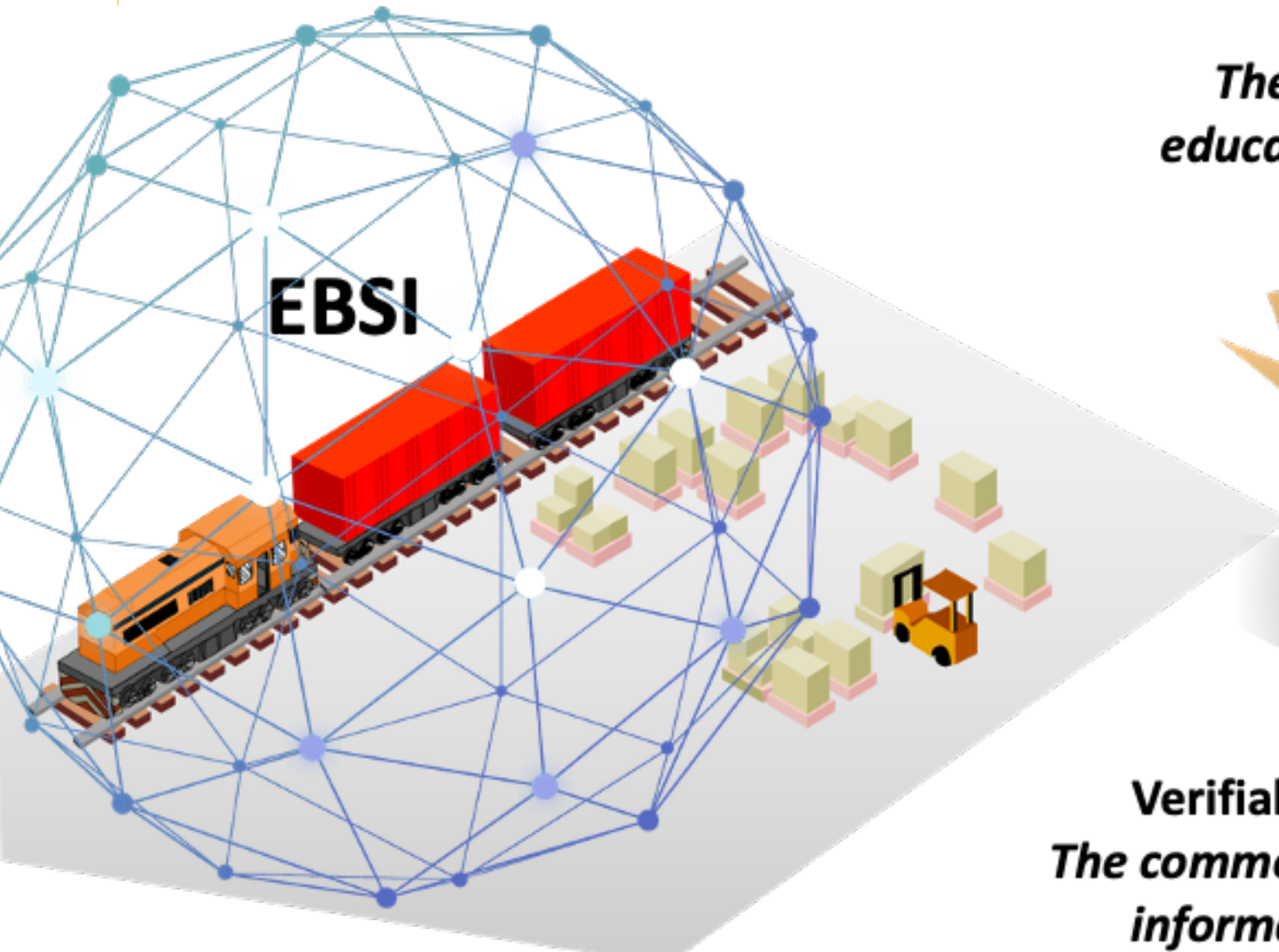
Semantics

Technical

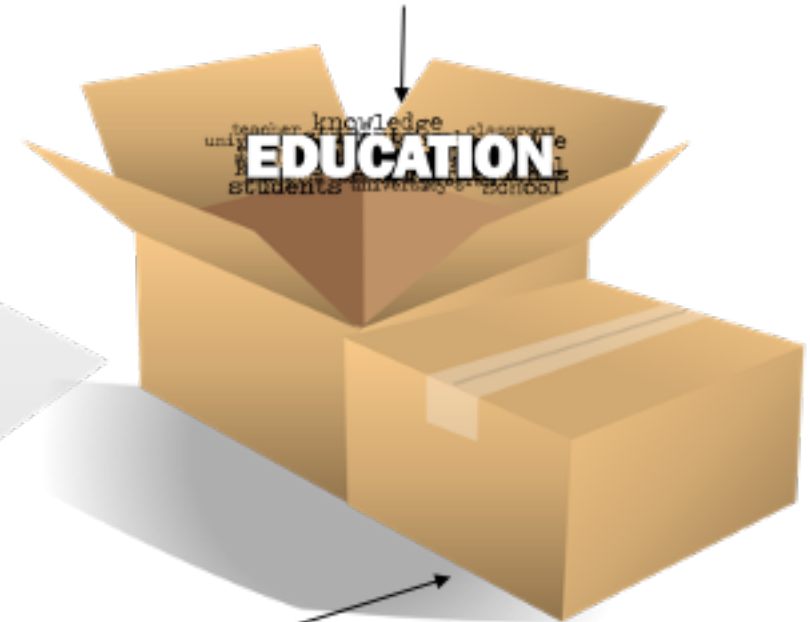


EBSI Diploma Use Case

Key benefit of EBSI Diploma: Interoperability (Technical & semantic)



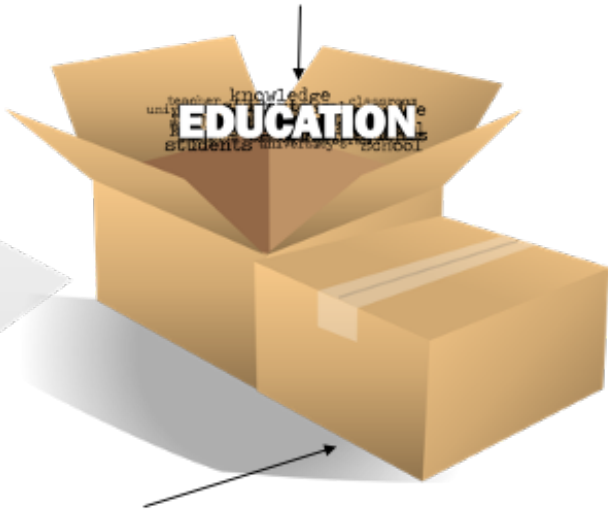
Common Data Model
The common way to describe educational credentials (contents)



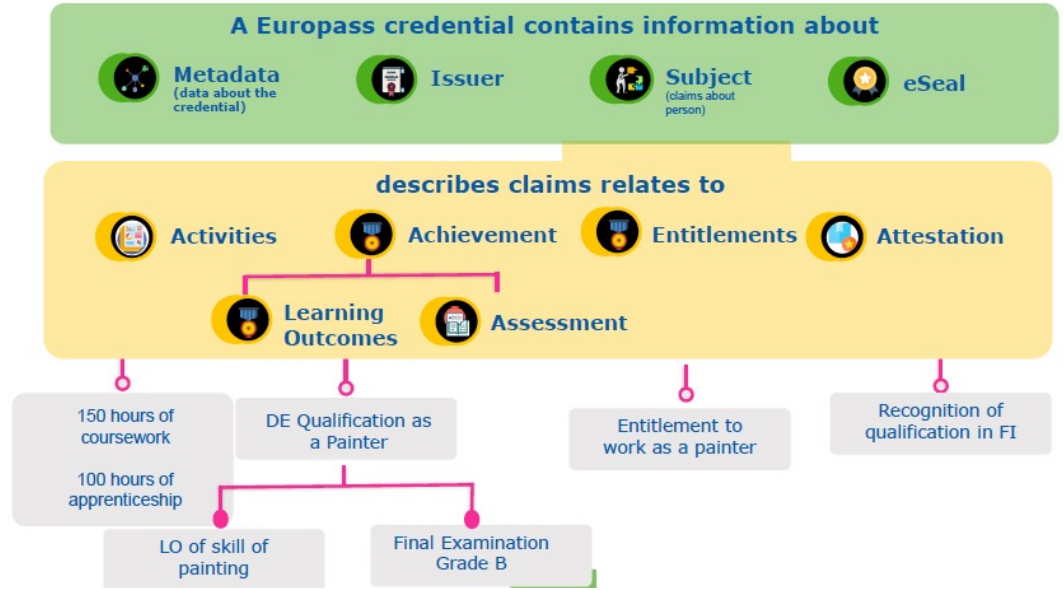
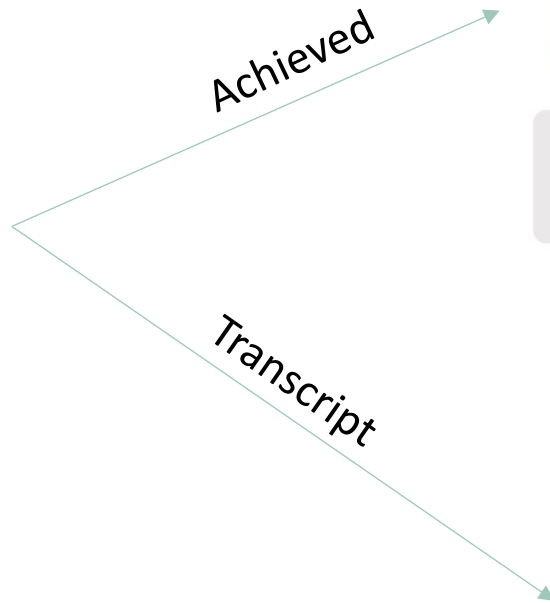
Verifiable Credentials
The common way to package information (content)

Interoperability: technical and semantic dimensions

Common Data Model
The common way to describe educational credentials (contents)



The common way to package information (content)



emrex-eu/elmo-schemas



ELMO Schemas

3 Contributors 12 Issues 8 Stars 9 Forks



Interoperability: legal dimension



Identity

The eIDAS trust framework: the common language for cross-border

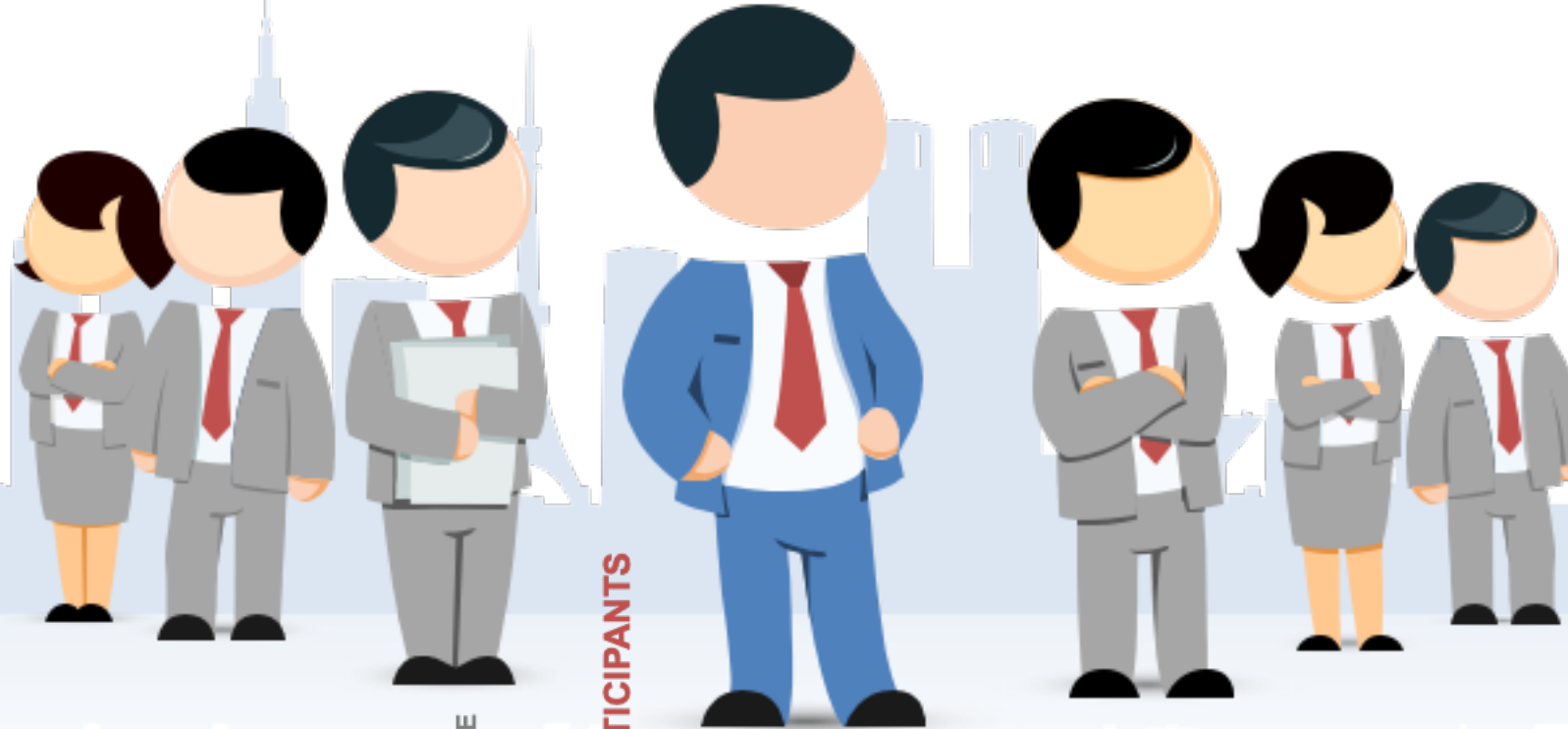
Current eIDAS only defines “levels of assurance” for Verifiable IDs: Only IDs with substantial or high LoA must be accepted by Member States

but ... IDs with low LoA may also be accepted on a voluntary basis, according to the corresponding national legislation applicable to e-Government processes

Data

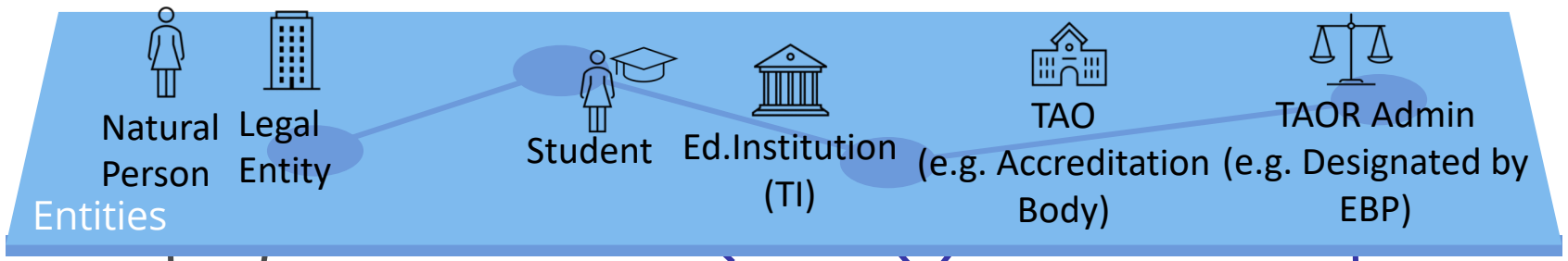
Data typically embody juridical acts, such as certifying acts by public authorities and other authoritative sources (including private sector bodies with respect to data they're authoritative for). Therefore, in the logic of eIDAS, they constitute **legally binding electronic documents, that should be authenticated according to the national legislation** (so national legislation/rules applies for cross-border mobility data)

Interoperability: governance dimension

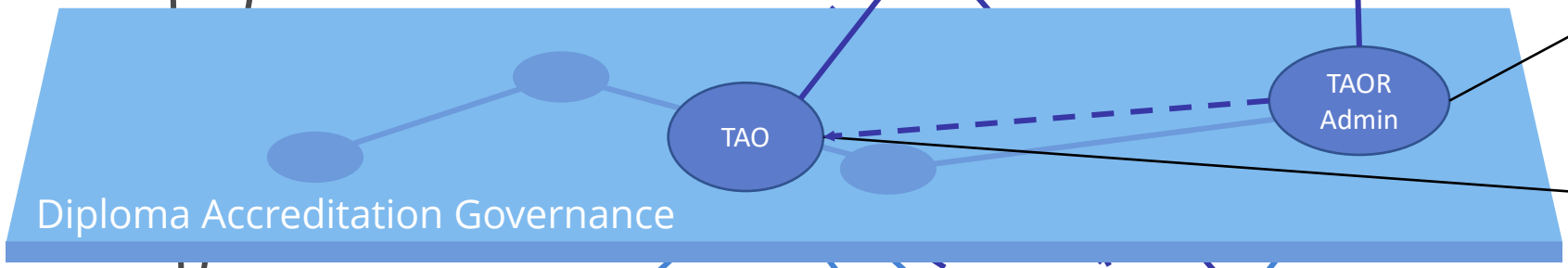


Diploma UC

Entities: Natural Persons and Legal Entity



Domain Accreditation Governance. Each domain may have a different legal meaning for accreditation processes, bodies, etc.

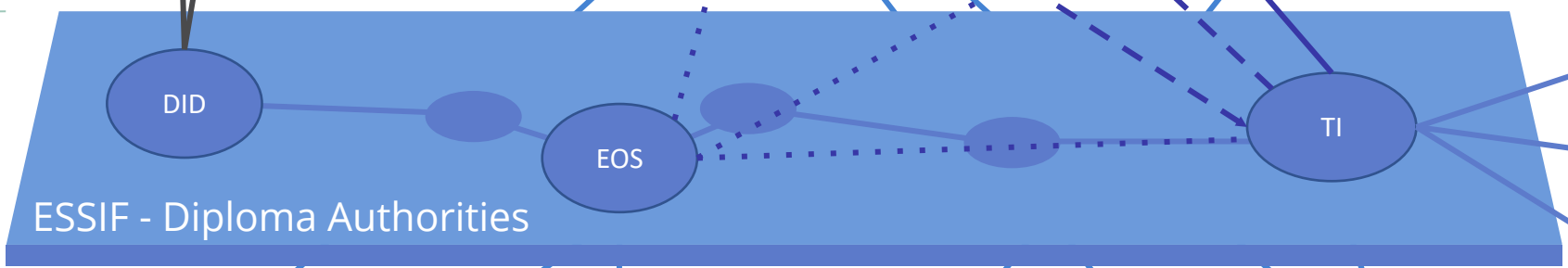


TAOR offline check to verify Legal Entity entitlement to become TAO

MS' TAO will do an offline check to verify Educational Institution entitlement to become TI

Diploma

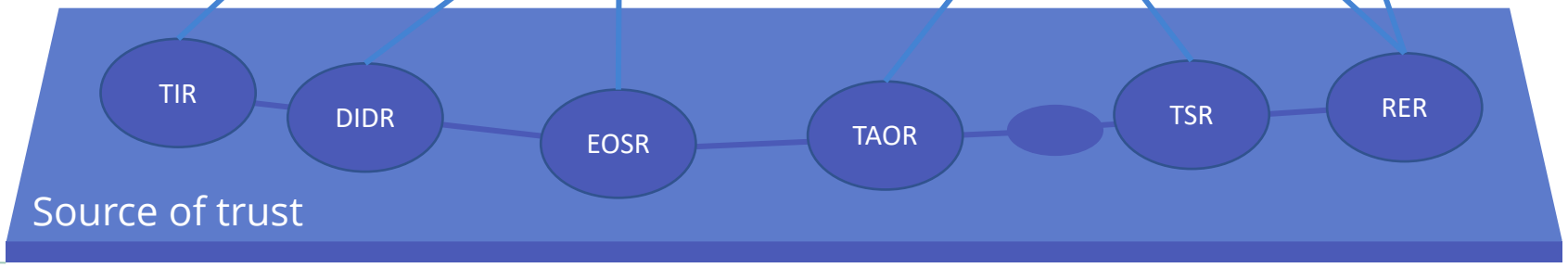
V Credential Authoritative source (Domain UC' legal entities can play different roles)



- High LoA (eID)
- Substantial LoA (MyAcademicID)
- Low LoA (other means)

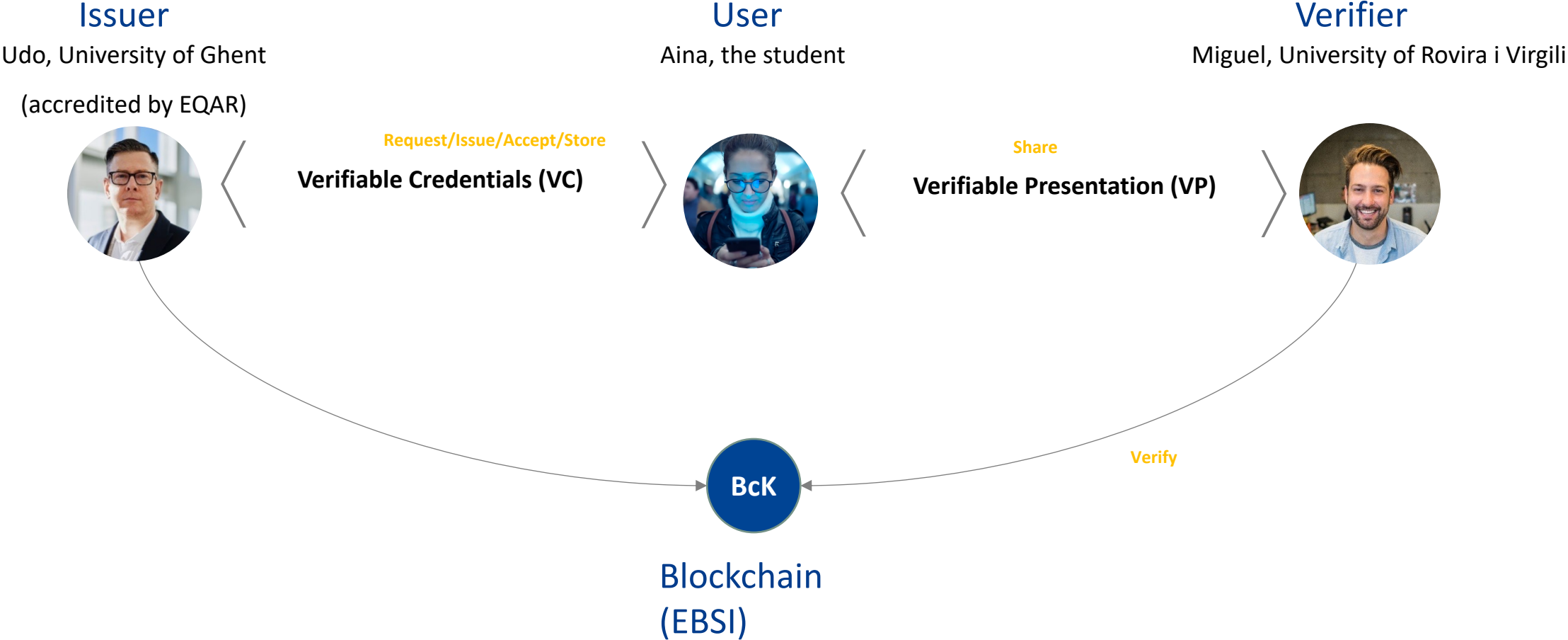
ESSIF

Ledger



- "Can act as"
- "Is"
- - - -> "Accredits"
- "Owns"
- "Responsible"

Citizen in full control of his/her identity(ies) and data

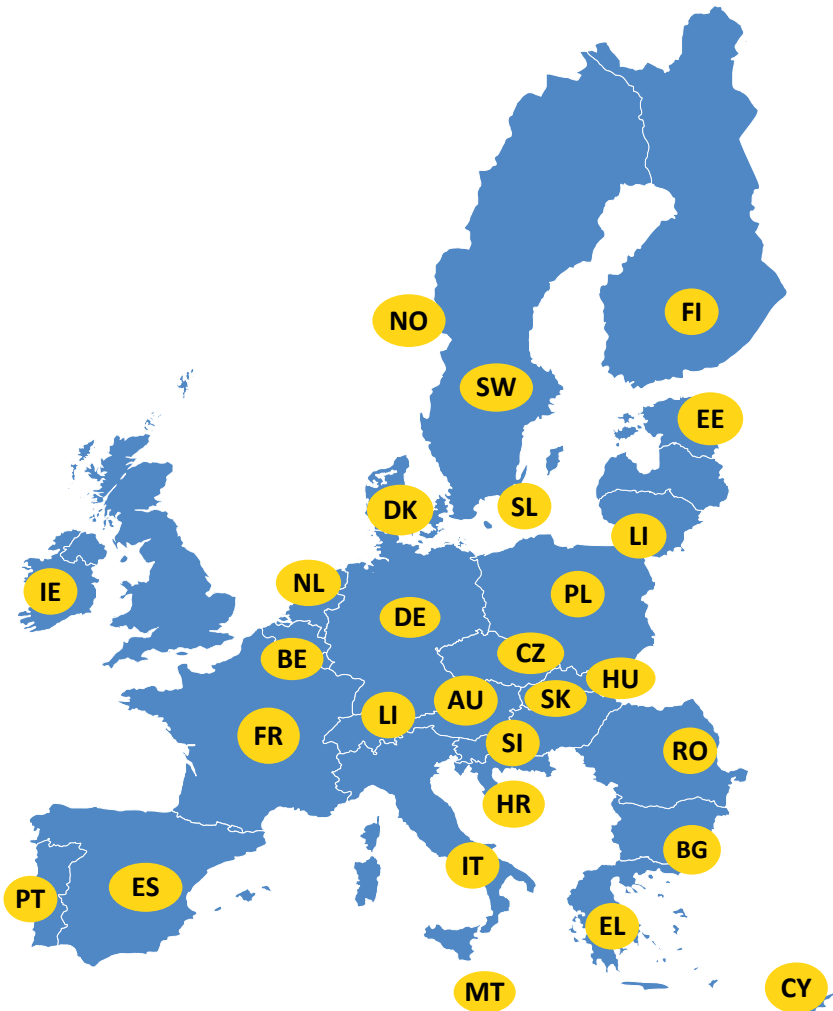


EAs are designing the MU Pilot in picture

2 European universities alliances, +18 universities from +15 countries, +EQAR



Collaborating with major global/European developments/standards/consortia



- W3C
- DIF
- ISO
- ETSI
- INATBA
- ESSIF-LABS
- DG-EMPL
- DG-EAC
- DG-CNECT
- DIGIT
- EMREX/ELMO
- GEANT
- DCC
- GAIA-X
- ..



Ready for your questions now!