



Connection to other initiatives



What is EMREX?

- A standard on how to connect to student data repositories
- A general solution to enable the citizens to control their data
 - Access to data
 - Share data
- Open network – result owner gives access



What is EMREX?

- Transport layer
 - A protocol defining transport of educational data between data owners and processing institutions
- Structured data
 - Definition of a set of data, using ELMO

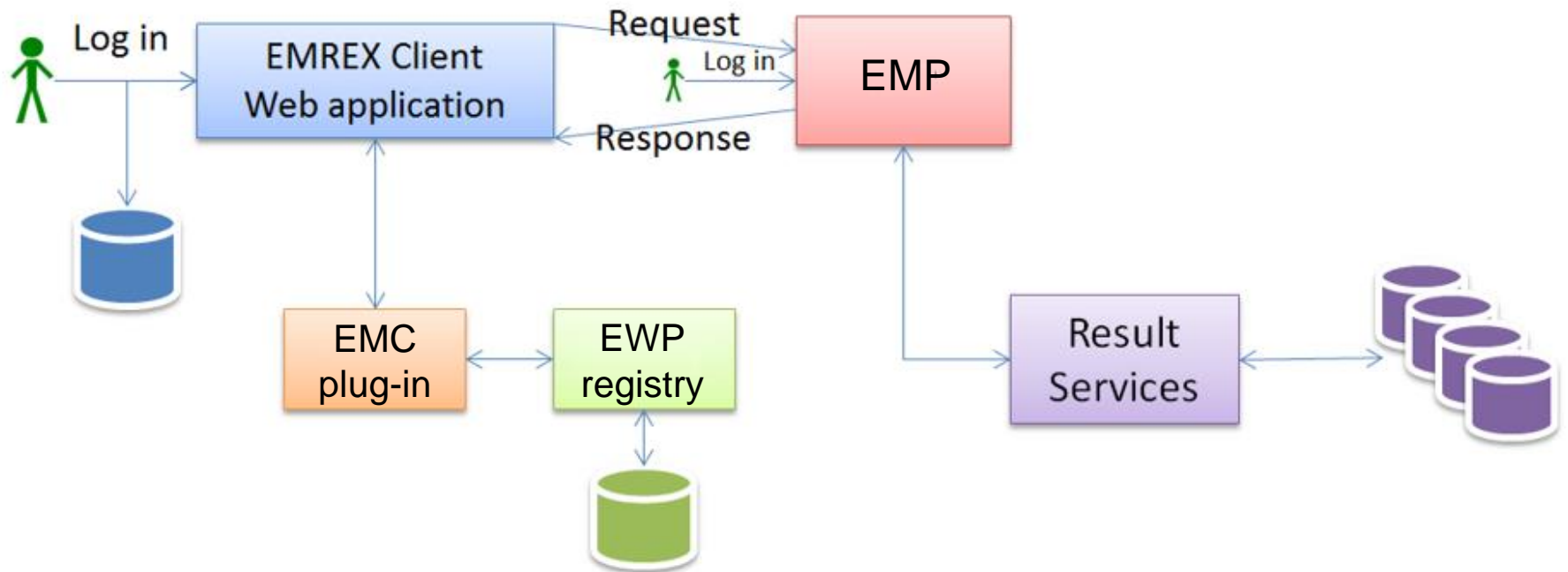


Other European initiatives

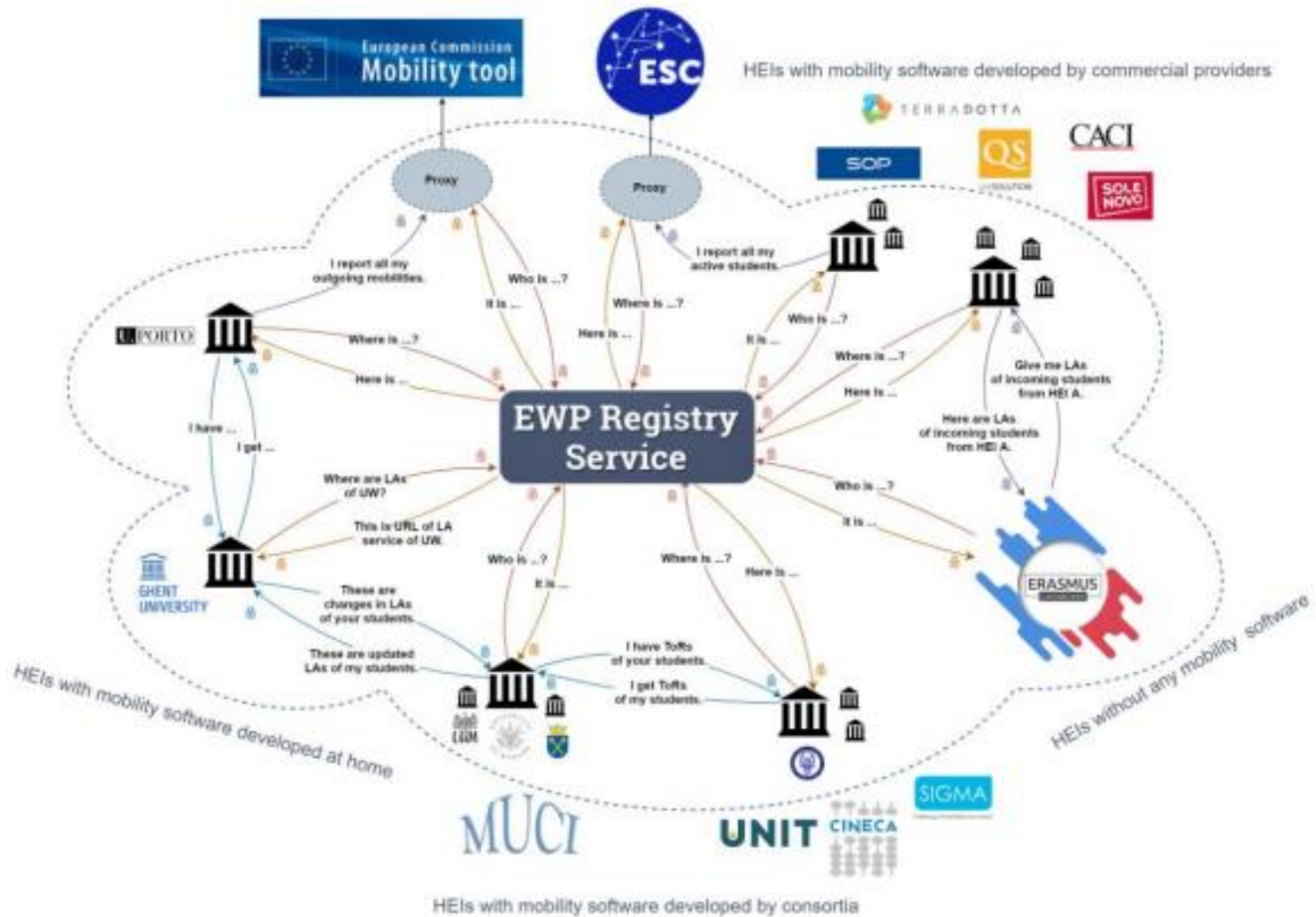
- EWP
 - Erasmus Without Paper
- EDCI
 - Europass Digital Credential Infrastructure
- EBSI Diploma
 - European Blockchain Infrastructure Diploma
- SDG
 - Single Digital Gateway



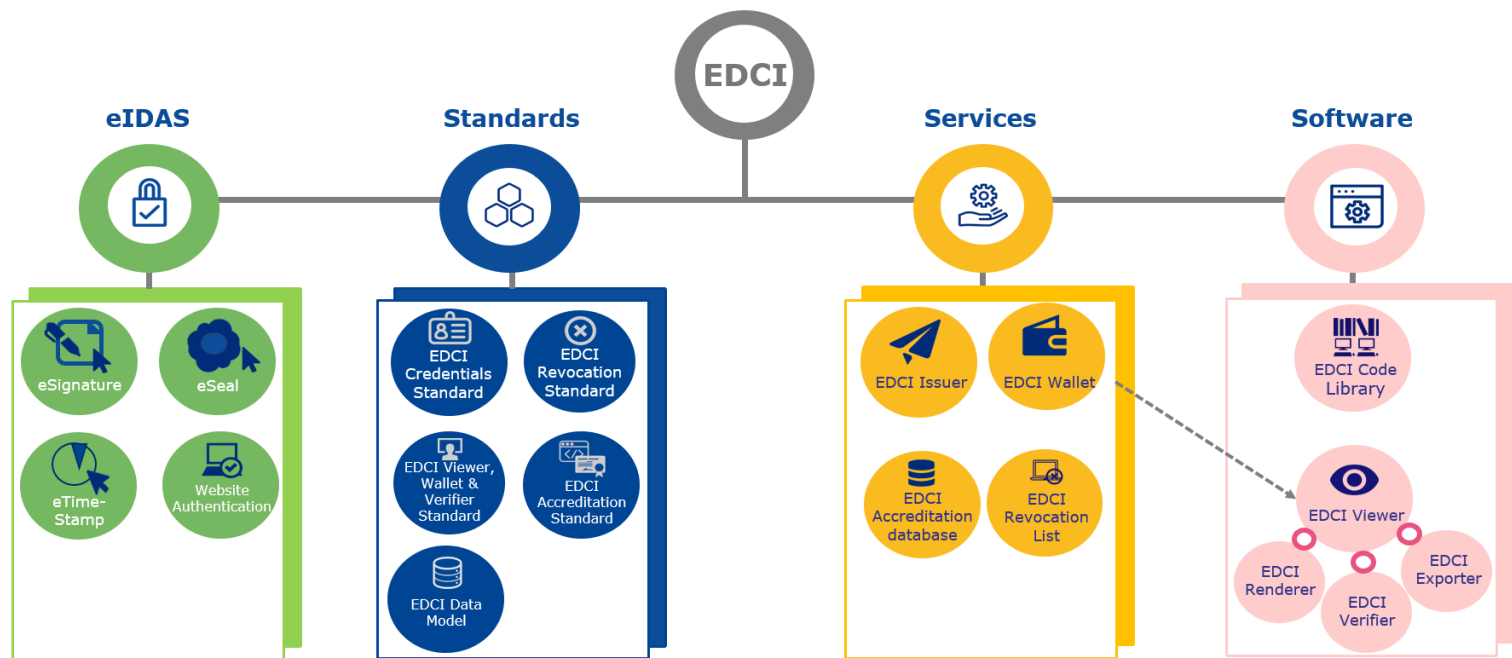
EMREX



EWP

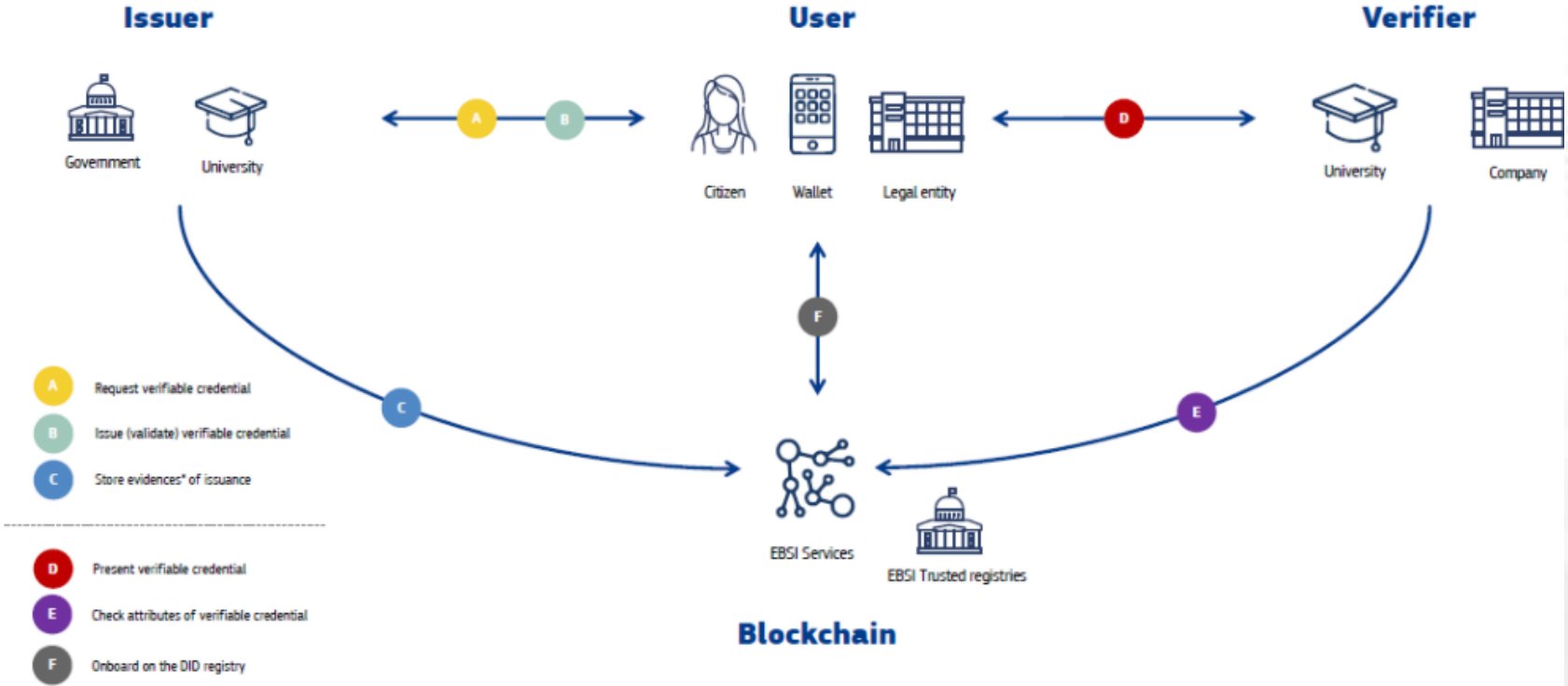


Europass EDCI

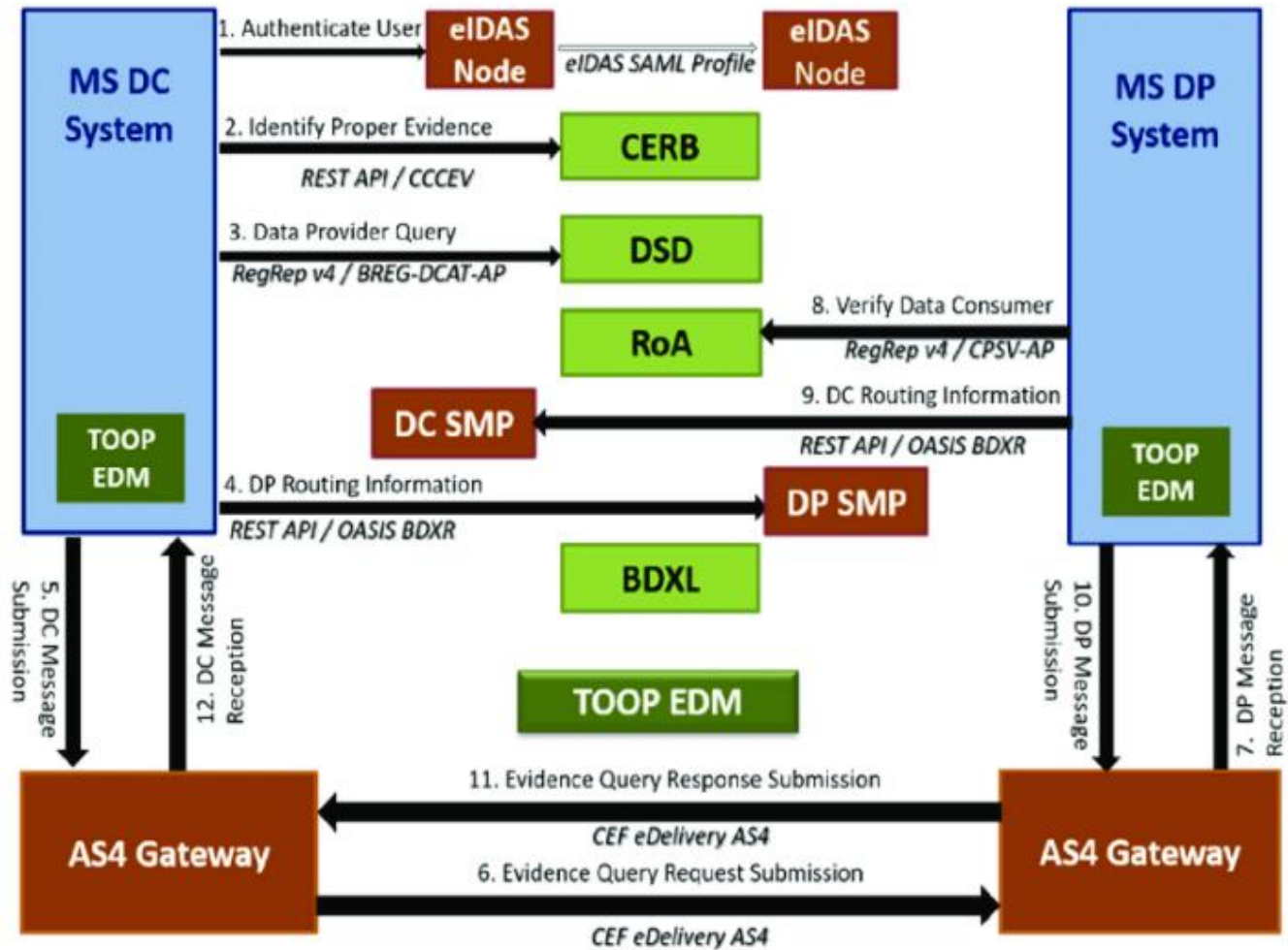




EBSI



SDG



TOOP solution architecture overview



Transport layer

● EMREX

- Gives data owner access to their credentials, to share these with third party.
- Trust the data source, and the mechanisms for exchanging data
- Data owner is in charge of the process

● EWP

- Data transported directly between two HE institutions
- Trust the data source
- HE institution is in charge of the process



Transport layer

➤ Europass

- Gives data owner access to their credentials, to store these in a digital wallet.
- Trust the data source, and signatures
- Data owner is in charge of the process

➤ SDG

- Data transported directly between two HE institutions
- Trust the data source
- Hybrid where the “data owner” is in charge of data exchange



Transport layer

● EBSI Diploma

- Gives data owner access to their credentials, to store these in a digital wallet.
- Trust the data source, and signed block chain transactions
- Data owner is in charge of the process



Data format

- EMREX
 - ELMO
 - EWP
 - ELMO
 - EDCI
 - ELM (Europass Learning Model)
 - EBSI
 - ELMO and ELM?
 - SDG
 - Something new?
- XML
 - Json



Electronic identification

- EMREX
 - Agnostic; eIDAS eID, eduGain, others
- EWP
 - ESI (no direct authorization of students)
- EDCI
 - ?
- EBSI
 - SSI: DID
- SDG
 - eIDAS eID

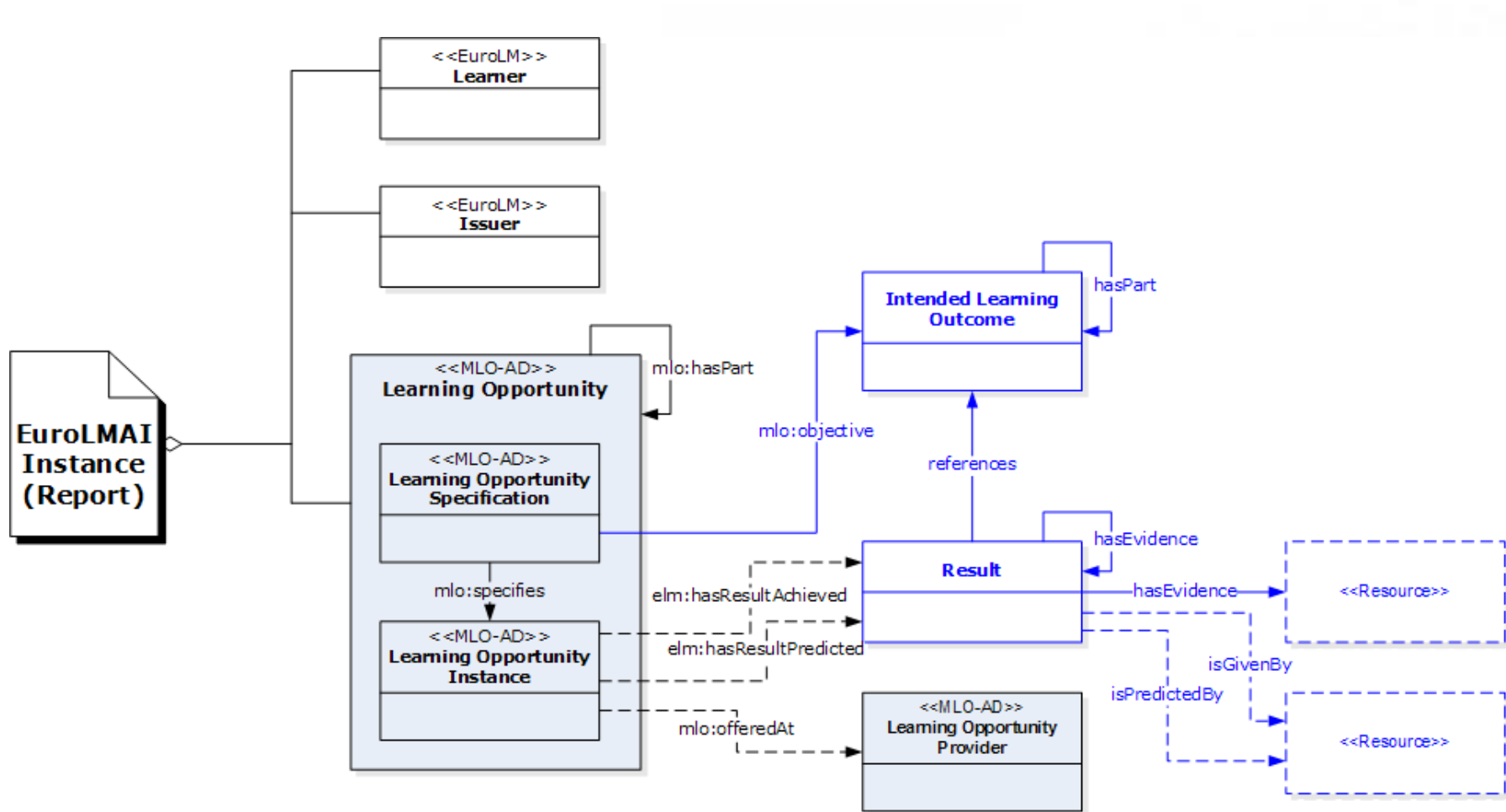


Electronic identification

- The European Digital Identity «eIDAS 2.0»
 - Trusted and secure Digital Identity for all Europeans
 - New European Digital Identity Wallets
 - Users in control of their own data
 - Not federation based
 - Persistence, id linking



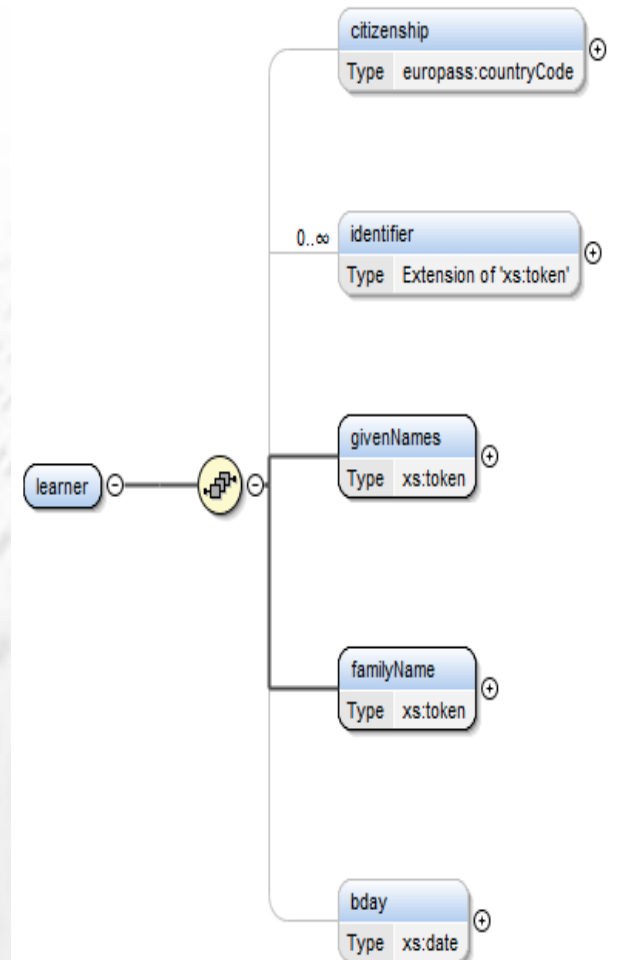
ELM-data model





The format - ELMO

- Terms in this format
 - Learner
 - Issuer
 - Learning opportunity specification
 - Learning opportunity instance
- Multi language
- Extension
- Attachment





ELM format

- Extension of W3C Verifiable Credential Data Model
- XML
- Aligned with ELMO
- Includes
 - Learning Specification
 - Learning Opportunity
 - Learning Outcome
 - Assessment
 - Entitlement



Summing up

	Authoritative source	Wallet based	Format	
EMREX	X		ELMO (xml)	Moving to Json, ELMO or ELM?
EWP	X		ELMO (xml)	
Europass EDCI		X	ELM (xml)	Moving to Json?
EBSI		X	ELMO/ELM (Json)	
SDG	X		Its own	



EMREX of the Future – Strategic Vision - Technical

- EMREX future position as Transportsystem
 - Vs. EWP
 - Vs. EBSI
 - Vs. EDCI
 - Vs. SDG
- EMREX using data structure
 - Basing on ELMO (XML and/or JSON)
 - Basing on ELM (XLM and/or JSON)
- ELMO future position as data standard
 - For certificates and diplomas
 - For living transcripts



EMREX of the Future – Strategic Vision

● EMREX vs Europass

- Complement each other?
- Cooperation on format?
- How can I build my wallet?
 - For the first time, or when the data is changed or when I loose access to my own wallet.
 - Add functionality
 - in EMREX to export data to wallet?

● EMREX vs SDG

- Make EMREX the solution for SDG?



- Put the citizen in center of process
 - Simplify the process
 - In control of the process
 - Life long support
- Enable digitalization for the receiver of the data
 - Trust
 - Complete data set
- Prevent fraud