

ELM / ELMO on the way to interoperability

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What is ELMO?

- ELMO is a data format for the exchange of education result information
- ELMO is an implementation of the European (CEN) standards ELM (EN 15981) and MLO (EN 15982)
 - XML-based format
 - Latest version contains courses, diplomas, Microcredentials etc.

ELMO is used by



- **EMREX**

- A solution for international transfer of student data in machine-readable form in production since 2017.
- Includes a network where a student/former student can access their assessment data, and share these data with a third party, like another university.
- Currently 6 European countries with certificates of secondary and tertiary education in production (over 60000 hits in 2020, with an upward trend).

- **Erasmus Without Paper (EWP)**

- The EWP/Erasmus+ Dashboard is a tool designed to support HEIs with the administration of mobility.
- It allows for managing of incoming and outgoing students, sign and review of their Online Learning Agreements as well as communication with students and partner institutions.
- As part of Erasmus+ starting with 01.01.2022 every HEIE having an Erasmus charter will be obliged to implement EWP (and to use ELMO format).



Challenges and opportunities

- ELMO
 - Is a data format for the exchange of (mainly educational) result information used by at least 2 networks in production currently
- Europass digital credentials
 - ELM – European Learning Model, part of EDICI-Europass digital credentials Infrastructure, similar to ELMO
 - Also set as standard for educational result information in Europe.
- Challenges and opportunities
 - At least temporary co-existence, co-operation between data models
 - Through strategic concepts and boundaries, rules and governance, migration paths, converters...
 - EMREX network could be a way to input data into Europass

ELM



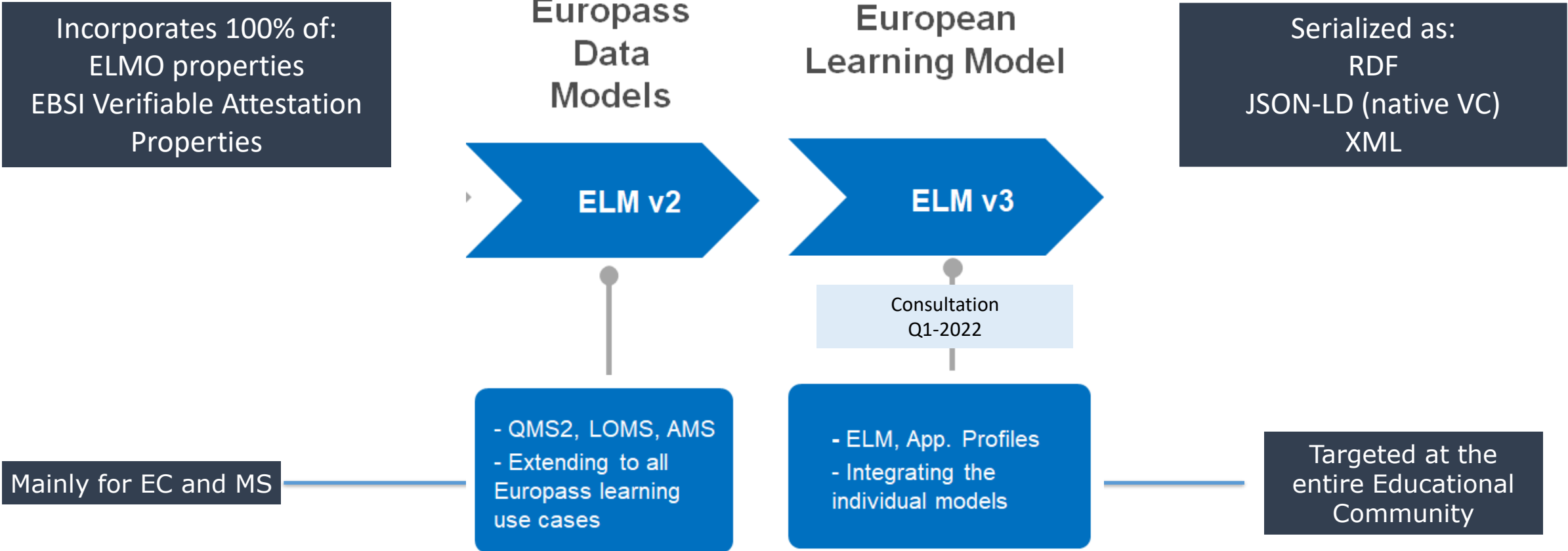
```
1 <europassCredential xmlns="http://data.europa.eu/europass/model/credentials#
http://data.europa.eu/europass/model/credentials#" xsi:schemaLocation="http:
urn:epass:credential:b576d4a4-c669-458b-ba17-23bd3237e177" xsdVersion="0.4.0
2 <type uri="http://data.europa.eu/europass/credentialType/generic"/>
3 <issued>2015-10-31T12:00:00+02:00</issued>
4 <credentialSubject id="urn:epass:person:1">
5 <citizenshipCountry uri="http://publications.europa.eu/resource/author
6 <nationalId identifierSchemeId="http://data.europa.eu/idTypes/Nation
spatialId="http://publications.europa.eu/resource/authority/country/
7 <identifier identifierSchemeId="http://data.europa.eu/idTypes/SomeOr
XXXXX" spatialId="http://publications.europa.eu/resource/authority/c
8 <fullName>
9 <text lang="nl" content-type="text/plain">Nancy Thompson</text>
10 </fullName>
11 <givenNames>
12 <text lang="nl" content-type="text/plain">Nancy</text>
13 </givenNames>
14 <familyName>
15 <text lang="nl" content-type="text/plain">Thompson</text>
16 </familyName>
17 <dateOfBirth>1965-07-06</dateOfBirth>
18 <placeOfBirth>
19 <geographicName>
20 <text lang="nl" content-type="text/plain">Springwood</text>
```

ELMO

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1 <elmo
2 xmlns="https://github.com/emrex-eu/elmo-schemas/tree/v1"
3 xmlns:xml="http://www.w3.org/XML/1998/namespace"
4 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
5 xsi:schemaLocation="https://github.com/emrex-eu/elmo-schemas/tree/v1 schema
6 <generatedDate>2015-10-31T12:00:00+02:00</generatedDate>
7 <learner>
8 <citizenship>US</citizenship>
9 <identifier type="nationalIdentifier">8304120000</identifier>
10 <identifier type="someOtherCustomIdentifierType">ABC000000</identifier>
11 <givenNames>Nancy</givenNames>
12 <familyName>Thompson</familyName>
13 <bday>1965-07-06</bday>
14 <placeOfBirth>Springwood</placeOfBirth>
15 <birthName>Nancy Thompson</birthName>
16 <currentAddress>
17 <recipientName>Attn. Fred</recipientName>
18 <buildingNumber>1428</buildingNumber>
19 <streetName>Elm Street</streetName>
20 <postalCode>45505</postalCode>
21 <region>Ohio</region>
22 <country>US</country>
23 </currentAddress>
24 </learner>
```



ELM Evolution





Key facts about ELM

- Policy underlines that only **digitally signed** credentials are in the realm of EU policy
- Across these policies the EU commits to
 - Maintaining and Updating Data Models for Courses & Credentials
 - creating a technical infrastructure consisting of:
 - EU run Services (Europass, European Student Card etc) [centralised]
 - National Services interoperable through the EU layer [decentralised]
- Europass is currently the main citizen facing service for credentials at present:
 - 3 million wallets + 1 million new every 6 months
 - Already largest open-access wallet service globally

ELM/ELMO Interoperability – Current Status



- ELMO is mappable to ELM version 3 in the current version without change under the following restrictions:
 - Attachment fields: These do not exist in ELM at the moment but will now be included for the final version of ELM version 3.
 - Diploma Supplement fields: ELMO uses simple string fields here, ELM mostly controlled-list fields. If the string fields are not filled properly, these fields might not be mapped in the ELM controlled list fields.
- ELM data could be mappable to the EWP and EMREX ecosystem via an appropriate ELM schema (the schema would still need to be created).
- Thus, a European data standard consisting of ELM version 3, which is largely compatible with both ELMO, is defined.
- Regarding interoperability with SDG there are currently discussion between DG EMPL and DG GROW.

ELMO – ELM cooperation – Next Steps



- Integrate management of ELMO and the ELM via the ELM governance (with the long-term aim of integrating the models).
- Can EBSI provide support for integration of its services into the overall Europass stack?
 - Questions remain on legal validity and maturity of eSealing solutions
- Cooperation on working with MS on creating Digital Credential Transformation Plans as per the EU Data Strategy.
- Regular coordination.

Questions?

<https://github.com/emrex-eu>