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Fostering Interoperability of European Qualifications: The Qualifications Dataset Repository

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Fostering Interoperability of European Qualifications

ESCO





ESCO

European Skills/Competences, qualifications and Occupations

[European Commission](#) > ESCO



 [ABOUT ESCO](#)

 [CLASSIFICATION](#)

 [TOOLS & RESOURCES](#)



28.07.2017

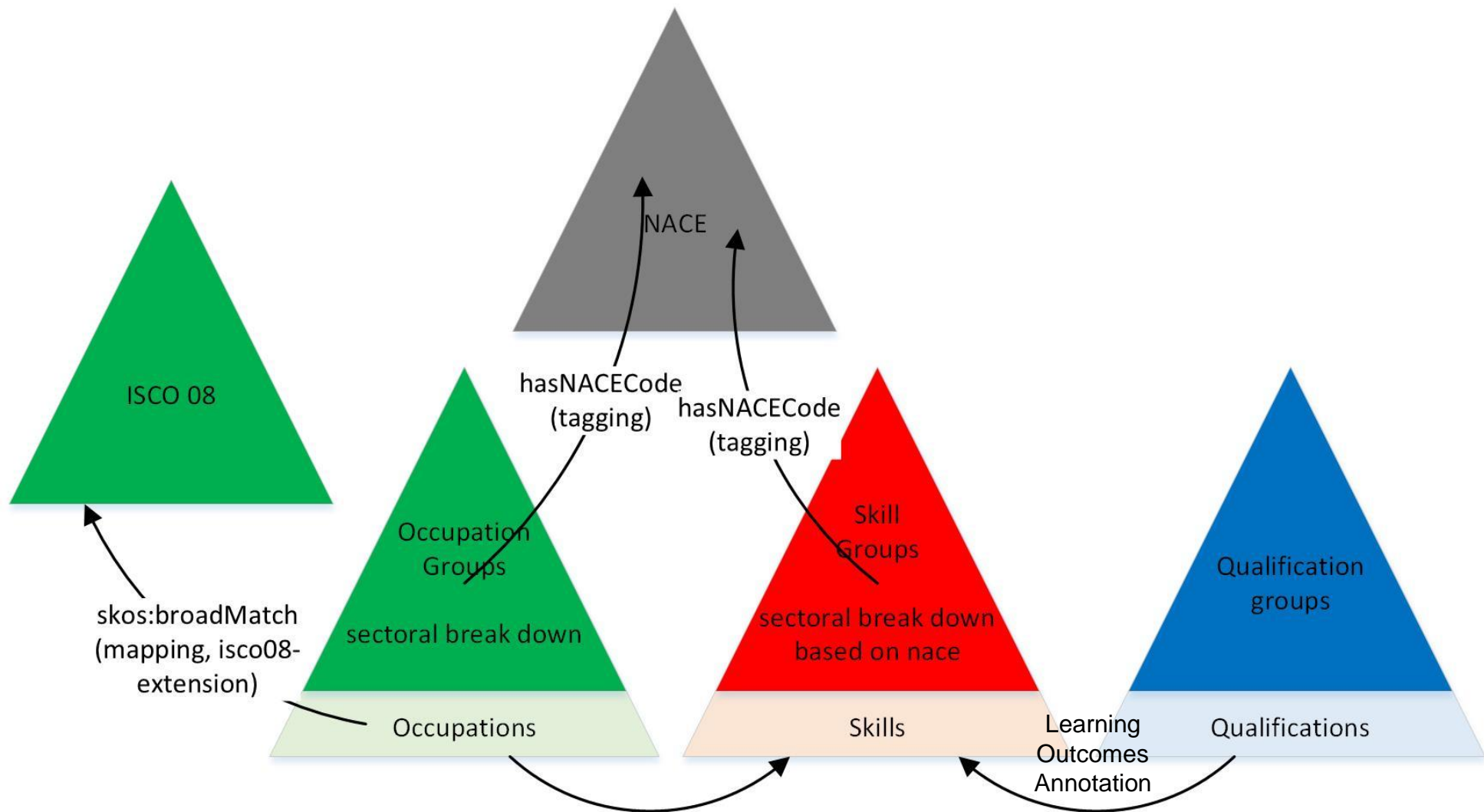
ESCO in EURES

EURES will use ESCO as a common European reference language to find the best match between jobseekers and job posts, by automatically comparing knowledge, skills and competences requested by the employer with the skills profile of candidates.

[News item](#)



The ESCO data model





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The Qualification Metadata Schema



Qualification Metadata Schema (QMS) - What

Qualifications metadata schema

Data model for **describing** and **exchanging** qualification information. Aimed at supporting linked data publishing of qualifications across Europe.

Goal

- Facilitate the exchange of qualification information between different stakeholders across Europe and the Learning Opportunities and Qualifications in Europe (LOQ) and ESCO portals.
- Republishing the **decentralised and distributed** information on qualifications across Europe in ESCO.

Qualification Metadata Schema (QMS) - How

Step 1: Abstract qualification information model

Development of an **abstract data model for describing and exchanging qualification information**. It models the information about qualifications that the European commission wants to be shared and published.

Step 2: Ontology mapping the information model to RDF

Development of an ontology defining the **vocabulary of predefined** terms with accompanying semantics used to describe and exchange the qualification information according to the qualification data model.

Step 3: Support different exchange formats

Development of an **xsd to support** the exchange of information on qualifications according to the qualification data model in **xml**. It reuses the terms, concepts and controlled value ranges defined in the ontology.



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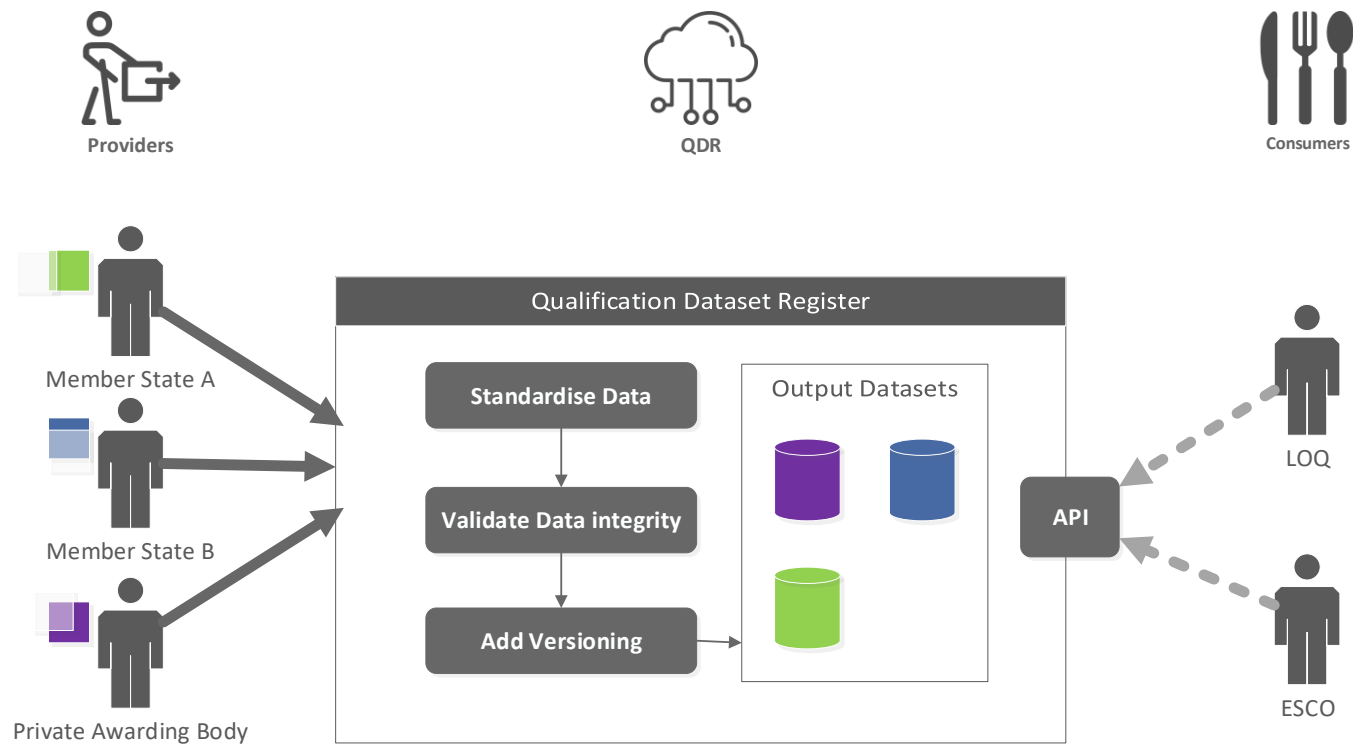
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The Qualifications Dataset Repository



QDR - Workflow

Member States and Private Awarding Body publishing their data into QDR, which are then **republished on European portals**.



QDR - How

Central data portal is built on 3 main components:

- A **versioned** qualification **dataset register** that offers the services for dataset management both content as metadata.
- A **harvester** component responsible for extracting, transforming and loading the published qualification data into the versioned qualification dataset register.
- An **aggregator** selecting and merging the transformed and validated datasets into a consistent qualification dataset that can be feeded into European portals.

The Dataset Metadata Repository is built on RDF technologies:

- RDF to capture, store and query the metadata about the published datasets.
- **DCAT-based** ontology modelling metadata of versioned datasets (extension of DCAT).
- Backend triplestore.

QDR - How

The versioned qualification dataset register allows:

- Data providers to **register themselves** and to **manage metadata** about the datasets they publish:
 - who is publishing?
 - what kind of qualification information is being published?
 - where and how can this information be retrieved? (location, distribution format,...)?
- Data providers that are not able to host and publish their datasets in their own systems, to publish on the central platform itself (by **uploading the datasets**).
- ESCO and LOQ to explore, find, identify and select qualification datasets coming from the different data providers.

QDR - Software characteristics

Performance

- The system supports up to **10 simultaneous users** uploading their datasets.
- The ETL process takes maximum one hour.
- Scotland to upload **12,000 qualifications** to the platform in the coming days.

Hosting

- The software is hosted on a cloud platform maintained by DIGIT.
- Physical files are hosted using Apache.
- Triple store is **OWLIM**.

Data consistency

- Datasets are **validated against** the QMS.
- A **validation report** is generated and made available for the users.

QDR - Software characteristics

Security

- Handled via **EU Login**.
- Dataset distribution is **freely available** if the user has the correct URL.

Ease of use

- Process is straightforward (video available online: <https://www2.cogni.zone/QDRVideo.mp4>).
- Documentation has been provided to every Member States .

Reliability

- Backend development in Java.
- Frontend development in Angular2.

QDR - The challenges

Member States open up their NQDs

- Map to EQF (move towards a standardized way of metadata representation).

Provenance, Trust

- E.g. Access to **Base Registries** (under ISA2).

(Meta)data de-duplication!

- Same qualification issued in different countries ? (Microsoft, CISCO, Oracle)

QDR - The future

Automatic Integration with European portals

- Establish an **automated workflow** where users can select on which European platforms they want to republish their datasets and the platforms automatically query the QDR API.

Distributed publication

- Member States publish the list of **accredited education providers**.
- Education providers publish information about the **actual qualifications** that they issue.



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Questions?





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