ESCO: TOWARDS A SEMANTIC WEB FOR THE EUROPEAN LABOUR MARKET

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Agenda

An overview of ESCO
ESCO: an ecosystem of vocabularies
ESCO as Linked Open Data
Next steps
ESCO: Overview

A multi-lingual classification of European Skills, Competences, Occupations and Qualifications

Developed by the E.C.:
DG Employment, Social Affairs and Inclusion and
DG Education and Culture in collaboration with stakeholders (CEDEFOP, EQF, ...)

Already on its 4th development year

Currently: 10,000 concepts, 25 languages, >200K terms

Final: 25,000 concepts, >500K terms

https://ec.europa.eu/esco/home
Objectives

EU-wide set of multi-lingual vocabularies
  ◦ An upcoming **standard** in the EU job labor market

Facilitate EU job market transparency and mobility
  ◦ ESCO is developed in **25 languages**

Facilitate **matching**: supply (CVs) vs. demand (Job Vacancies)
  ◦ Applications can be built on top of the classification

ESCO classification as a **hub taxonomy** (in SKOS) for the job labor market
  ◦ Will be mapped to National Job Labor Market classifications
  ◦ Public/Private Employment Services
The 3 main ESCO pillars (the core)
Relations

The concepts in the pillars are related

- **Within**
  - (hierarchical broader/narrower)

- **Between**
  - (domain relations like essential and optional skills related to an occupation),

- **and outside**
  - (tagging and mapping relations)
Tagging Relations

Adding a tag to an ESCO concept for context information
- E.g. a NACE code for an Occupation Group
Mapping Relations

Compose

- exactMatch $\circ$ exactMatch
- exactMatch $\circ$ closeMatch
- exactMatch $\circ$ broadMatch
- broadMatch $\circ$ exactMatch
- exactMatch $\circ$ narrowMatch
- narrowMatch $\circ$ exactMatch
- broadMatch $\circ$ broadMatch $\supset$ esco:broadTransitiveMatch
- narrowMatch $\circ$ narrowMatch $\supset$ esco:narrowTransitiveMatch
An ecosystem of vocabularies

isco: International Standard Classification of Occupations
nace: Statistical Classification of Economic Activities in the European Community
cefr: Common European Reference for Languages
foet: Fields of Education and Training
eqf: European Qualifications Framework

isco-08
nace
cefr
occupations
skills / competences
qualifications
national classifications
foet
eqf

m
mapping

t
tagging
A “hub” Taxonomy – How will it work?

ESCO Taxonomy
(including nursing occupations)

Step 1: Map

Step 2: Publish ESCO and mappings as LOD

Linked Open Data

Step 3: Matching

KZIS-2010
Jobseekers registered in the Polish employment service

CV

Job vacancies published by the French employment service

ROME

MAY 2015

LINKED DATA ON THE WEB (LDOW2015) – A WWW2015 WORKSHOP
Publishing ESCO as LOD

The main drivers for LOD:
- Easy to link to other semantic assets
- Easy integration into existing ICT systems
- Ensure content is managed and quality assured before publication
- Ensure that continuous updates of the taxonomy do not impose an overhead for the EC
- Ensure that licensing, versioning and provenance are in place
The ESCO architecture (snapshot)
Current Status (software)

Installed release in PROD
- Includes a 1\textsuperscript{st} version of an LOD API with HTML content
- For example data.europa.eu/esco/occupation/463

The ESCO Data Model (full LOD version)
- data.europa.eu/esco/lod/model

Next versions (currently in ACC)
- SPARQL endpoint
- Final LOD API with RDF and JSON-LD content
- In PROD in a few weeks
Next steps

Finalize the APIs (LOD, Central Service, Mapping, Versioning)
  ◦ Local service API under testing by Europass team and PrES

Finalize the ESCO content (the remaining 16 NACE sectors)
  ◦ Online consultation process

Prepare “fit-for-purpose” pilots, to assess the quality of the classification

Work on the Qualifications pillar (NQDs as Open Data, Registers of Awarding Bodies and Work Context)

Discussions with LinkedIn to use part of the content (ICT sector)
Conclusions

The only multi-lingual classification in the Labour Market
A hub for mappings to National Occupational Classifications
A standard for Labour Market stakeholders

Published as Linked Open Data
- “Vocabulary ecosystem” SKOS-ified and provided as LOD
  - (ESCO keeps internal copies)
For more details

ESCOpedia

- https://ec.europa.eu/esco/escopedia

Main publications and lectures


Thank You! – Questions?

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