



ESCO

The European Classification of Skills, Competences and Occupations

Francesco Losappio
DG EMPL, Unit E1

24-06-2025

What is ESCO?

ESCO works as a **dictionary**



describing, identifying and
classifying professional
**occupations, skills, and
competences**

relevant for the **EU
labour market and
education and training**



Showing the **relations between occupations and skills** → i.e. listing essential and optional skills for each occupation



Available in **28 languages** (all official EU languages plus Icelandic, Norwegian, Ukrainian, and Arabic)

- **Freely accessible** on the ESCO portal.
- Data can be **downloaded** in various file formats or accessed via **API**

ESCO Structure

ESCO

EUROPASS !



OCCUPATIONS



SKILLS



QUALIFICATIONS

ESCO Structure

Hierarchy view

0 - Armed forces occupations +

1 - Managers +

2 - Professionals -

21 - Science and engineering professionals +

22 - Health professionals +

23 - Teaching professionals +

24 - Business and administration professionals +

25 - Information and communications technology professionals +

26 - Legal, social and cultural professionals -

261 - Legal professionals +

262 - Librarians, archivists and curators -

2621 - Archivists and curators -

2621.1 - archivist

cultural archive manager

Professionals > Legal, social and cultural professionals > Librarians, archivists and curators > Archivists and curators > cultural archive manager >

Description

Code
2621.4

Description
Cultural archive managers ensure the care and preservation of a cultural institution and the archives within. They ensure the management and development of the institution's assets and collections, including the digitisation of the archive collections.

Scope note
Excludes collection manager collection manager.

Alternative Labels
archive manager archivist archivist and records manager
cultural archive administrator cultural archive and records manager
cultural archive services manager cultural records manager

OCCUPATIONS PILLAR
3039 Occupations

Hierarchy view

K - knowledge +

L - language skills and knowledge +

S - skills -

S1 - communication, collaboration and creativity +

S2 - information skills +

S3 - assisting and caring +

S4 - management skills +

S5 - working with computers +

S6 - handling and moving +

S7 - constructing +

S8 - working with machinery and specialised equipment +

T - transversal skills and competences +

document museum collection

Download

skills > information skills > documenting and recording information > maintaining operational records > document museum collection >

Description

Description
Record information about an object's condition, provenance, materials, and all of its movements within the museum or out on loan.

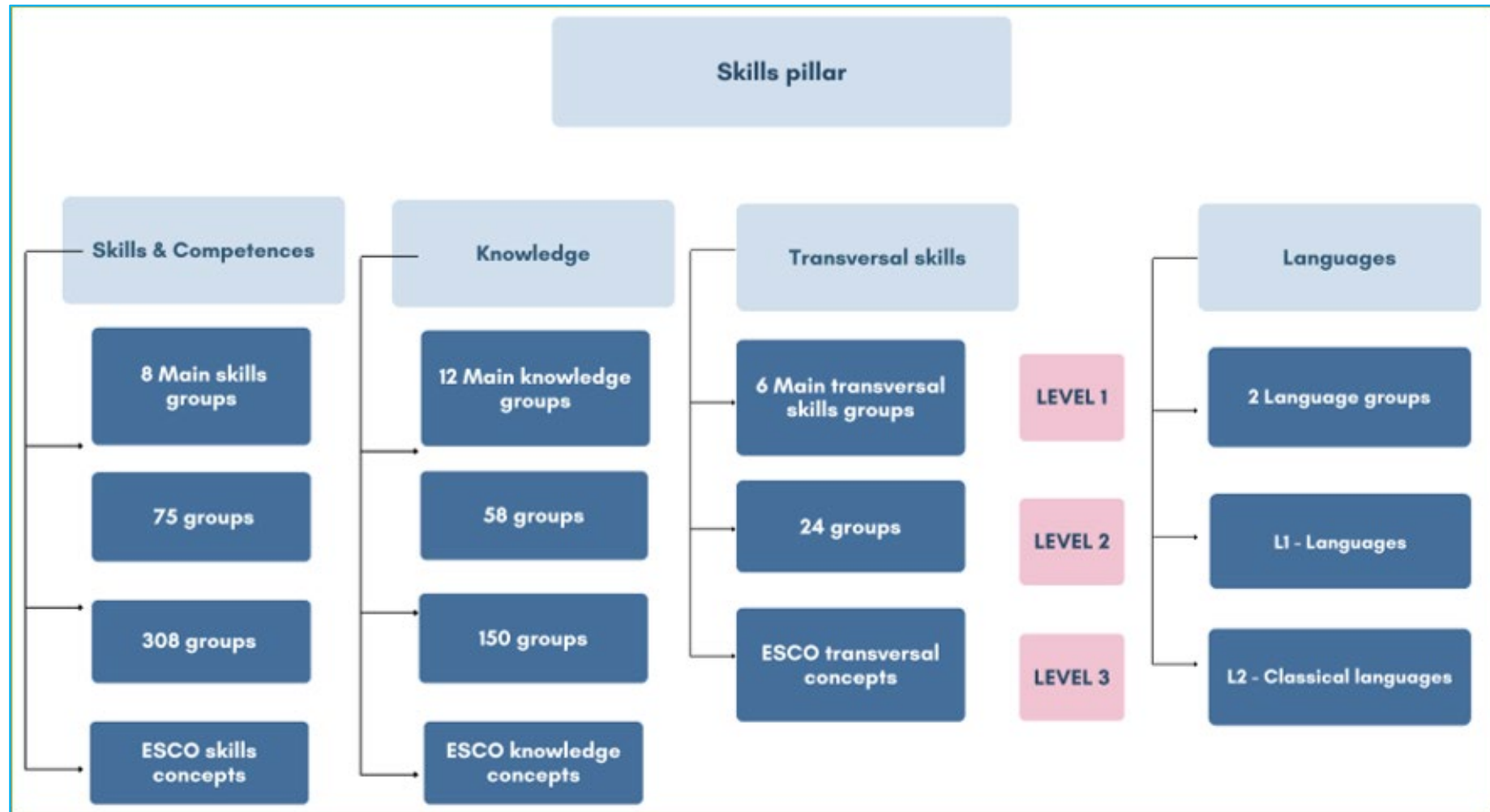
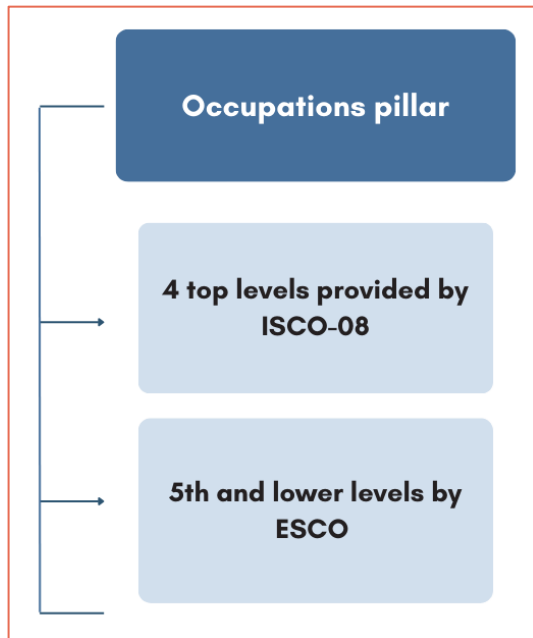
Alternative Labels
document collections at museums document museum collection
document museum collections keep track of museum artefacts
record museum collection

Skill type
skill

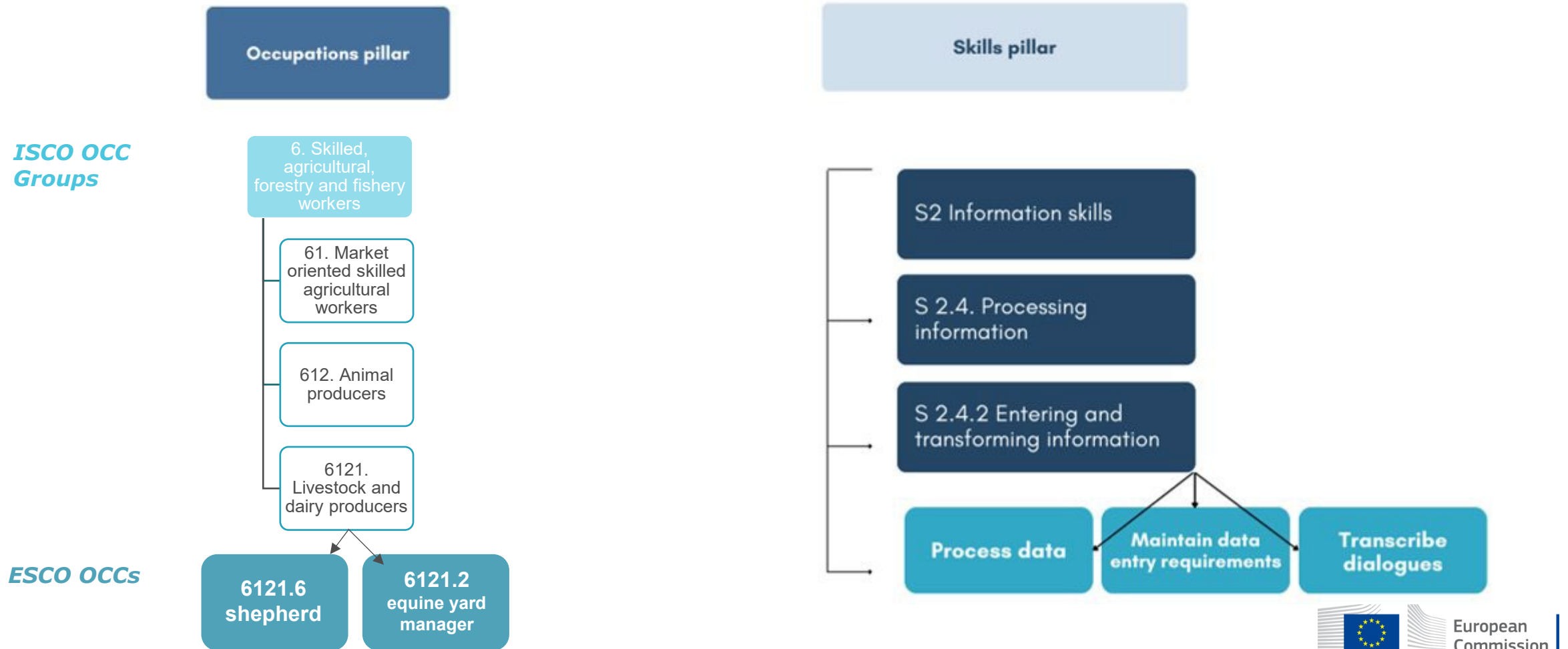
Skill reusability level

SKILLS PILLAR
13939 Skills/Competences & Knowledge

ESCO Hierarchy



Example of ESCO Hierarchy



ESCO collections: state of play

Digital Skills and Knowledge Concepts

- The approach had five steps, combining machine learning (ML) algorithms with human labelling and validation.
- **1,201 ESCO skills and knowledge concepts** have been classified as digital:
 - 718 skills,
 - 475 knowledge concepts
 - 7 transversal skills

Research skills collection

- ResearchComp has 3 main dimensions:
 - 7 competence areas (cognitive abilities, doing research, managing research, managing research tools, making an impact, working with others, self-management)
 - 38 competences
 - 389 learning outcomes along 4 proficiency levels (foundational, intermediate, advanced, expert)
- first competence framework aligned with ESCO

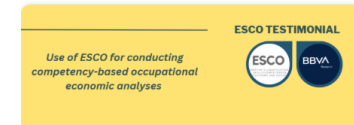
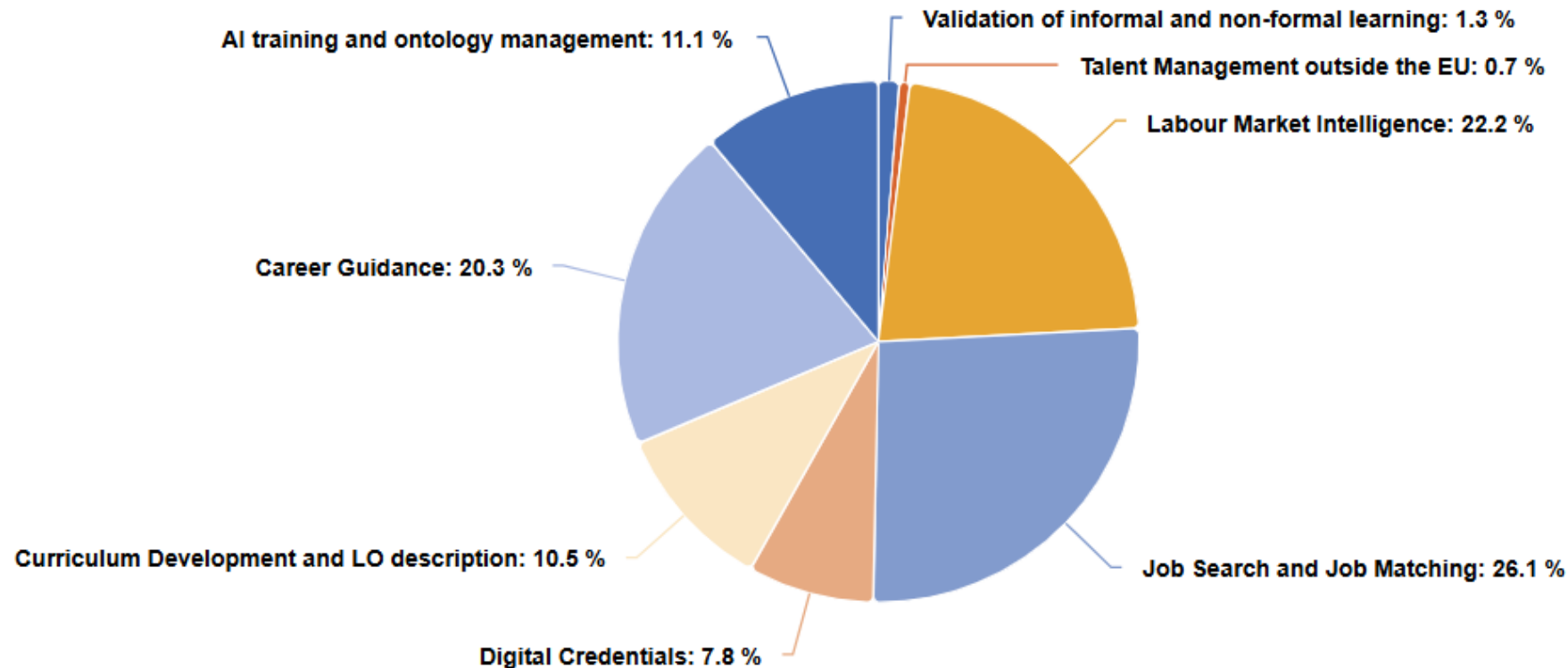
Green skills and Knowledge Concepts

- A total of **571 ESCO skills and knowledge concepts** are labelled as green.
 - 381 skills
 - 185 knowledge concepts
 - 5 transversal skills

DigComp skills collection

- The Digital Competence Framework for Citizens (DigComp) consists of 21 competences divided in five competence areas.
- The Commission decided to integrate those 21 competences of DigComp accompanied by its five competence areas in the skills pillar of ESCO

ESCO use cases - *How is ESCO used?*



News Testimonials

BBVA Research using ESCO for conducting competency-based occupational economic analyses

ESCO testimonials



News Testimonials

Saipem using ESCO for innovating the energy market landscape

ESCO testimonials



News Testimonials

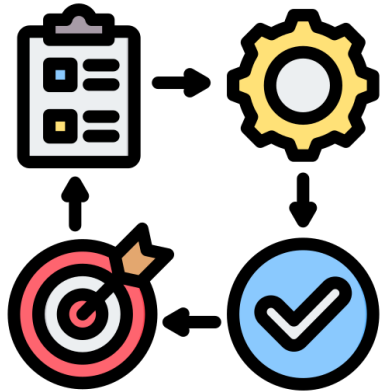
MyEduLife Project using ESCO for improved Vocational Training transparency and comparability

ESCO testimonials

Continuous improvement of ESCO

ESCO needs to be updated continuously because of:

- Changes in the labour market
- Changes in curricula
- Changes in terminology
- Changes in the requirements of IT applications



- Taxonomy enrichment in line with Labour Market trends
- Improvements driven by data evidences
- AI techniques to support content and quality updates

Minor vs. Major ESCO update

MAJOR Content Update

Involves the creation of **new content** and a **quality review** of the existing classification.

- Changes affect the concept level.
- Requires mapping tables update.
- Longer working period.

Creation of concepts, semantic changes in PT/Description, deletion of obsolete concepts, changes in data model.

ESCO v1.1 & ESCO v1.2.

MINOR Content Update

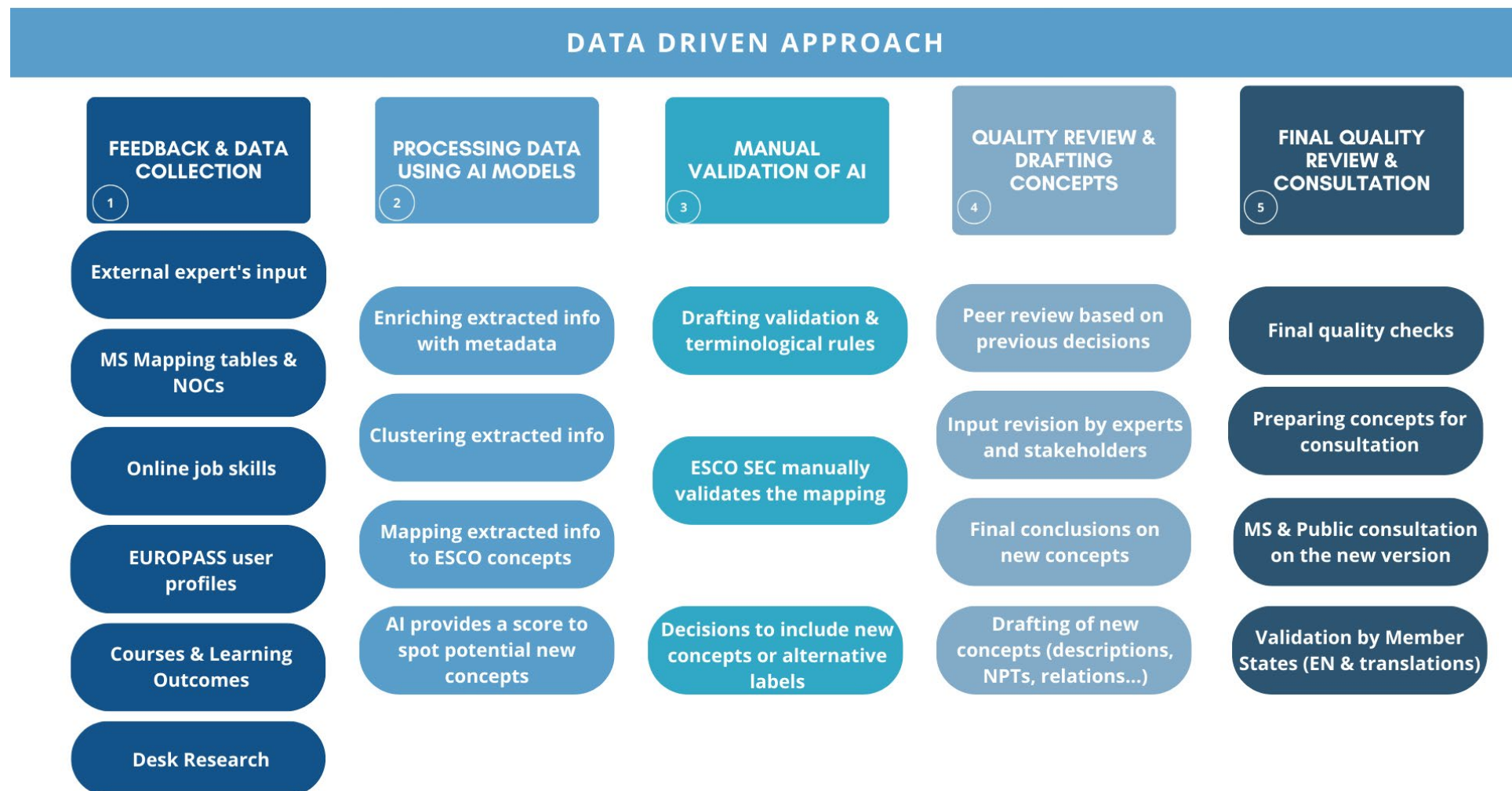
Involves a **quality review** of the existing classification.

- Changes **DO NOT** affect the concept level
- It **DOES NOT** require mapping tables update.
- Existing concept scopes do not change.

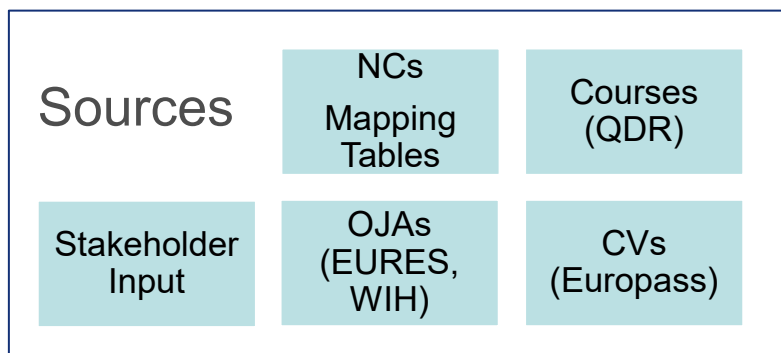
Adding or removing concept relations, minor changes to alternative labels, typos, translations.

ESCO v1.1.1 & ESCO v1.1.2

ESCO v1.2. Methodology



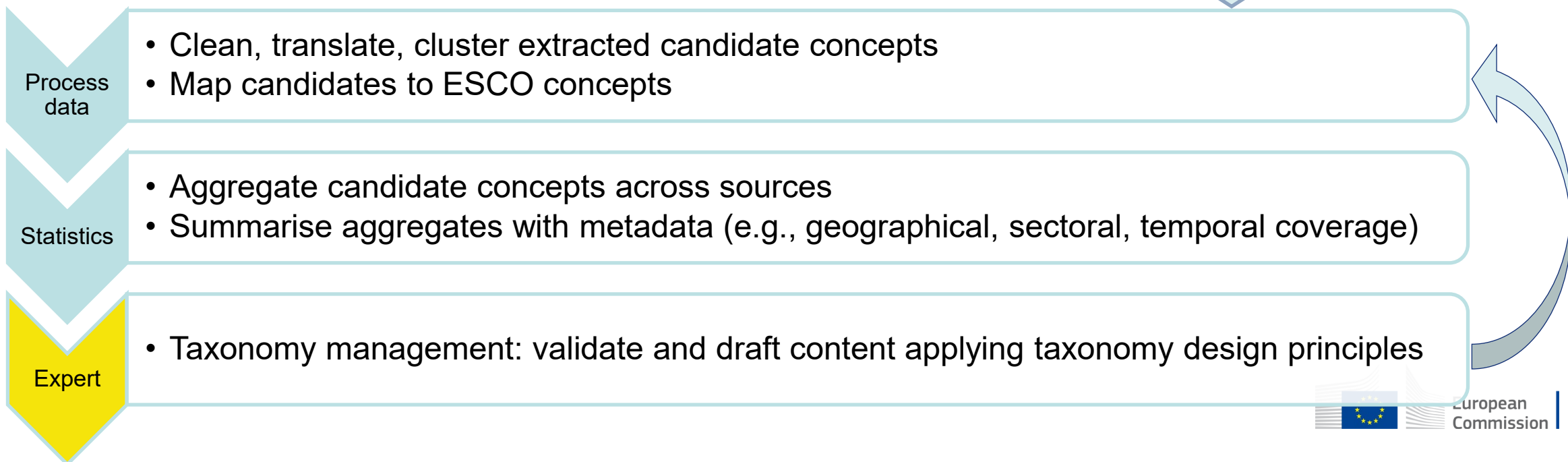
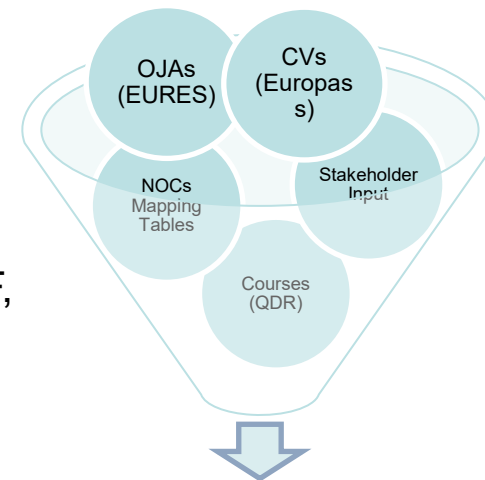
Use of AI in ESCO - Integrated approach



Extract data fields



Add metadata (e.g. ISCED-F, NACE, country, ...)



Areas of focus for future improvements

Ontology relations

Linking concepts from within the skills pillar

Consistency

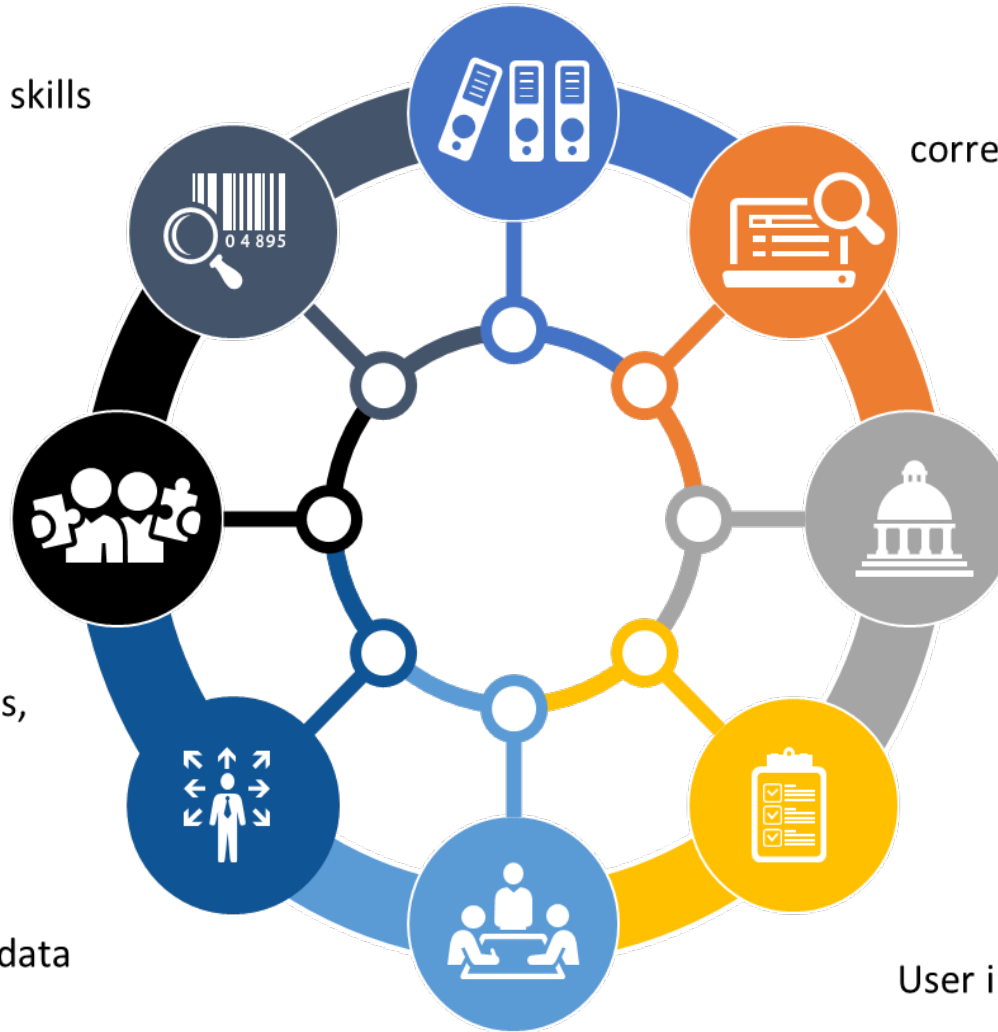
Improve consistency of concepts across skills and knowledge tree

Linking skills to occupations

Improve quality of essential and optional skills links to occupations, prioritizing green and digital

Data model

Review suitability of the current data model to users needs



Design principles

Realism in representing industries, correctness, simplicity, user friendliness

Granularity

How granular does ESCO need to be? How to represent granular concepts?

Contextualization

Linking transversal skills to knowledge and non-transversal skills in a user-friendly way

ESCO Portal

User improvement changes in the portal

THANK YOU!