ESCO: Connecting people and jobs

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EU goals in a digital labour market

Better link education-training to labour ➡ ensure access to the best opportunities

Ensure transparency of information on skills through systems' interoperability

Allow open-fair access to information on skills, qualifications, jobs and training

➡ avoid monopolisation of data in digital labour market

➡ European open standards to counteract risks of proprietary standards

How can we overcome the skills gap?

- *Intra-EU mobility*

- *Job matching based on skills*

- *Transparency to support recruitment, validation and recognition*

- *Bridge the communication gap between education and employment*

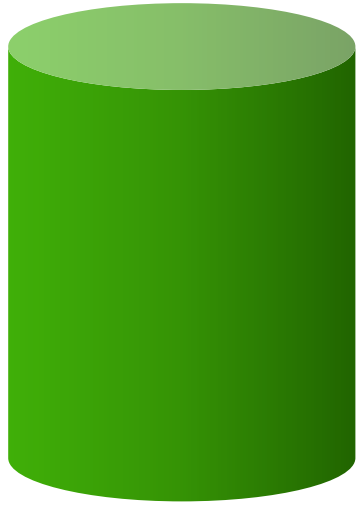- *Better labour market intelligence*

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ESCO as a common reference language
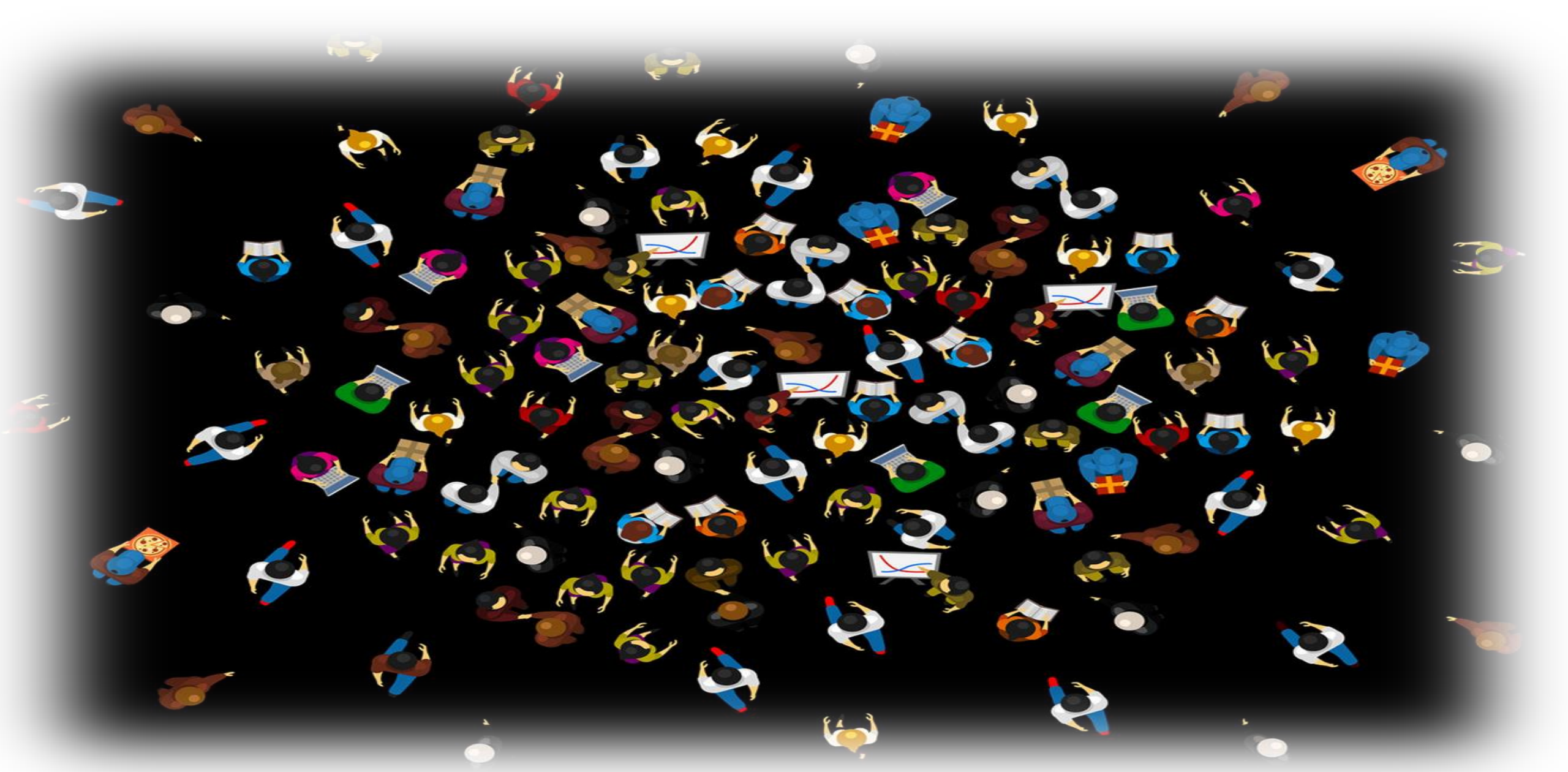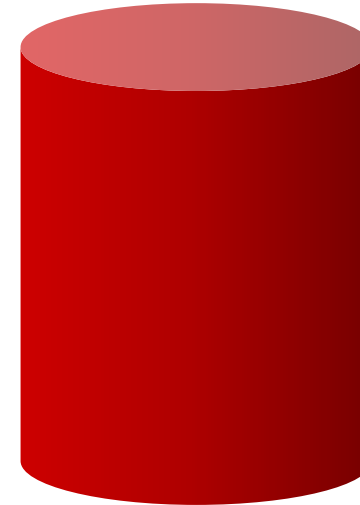
What is ESCO?

ESCO

European Skills, Occupations and Qualifications

3 008
Occupations

13 890
Skills + Knowledge

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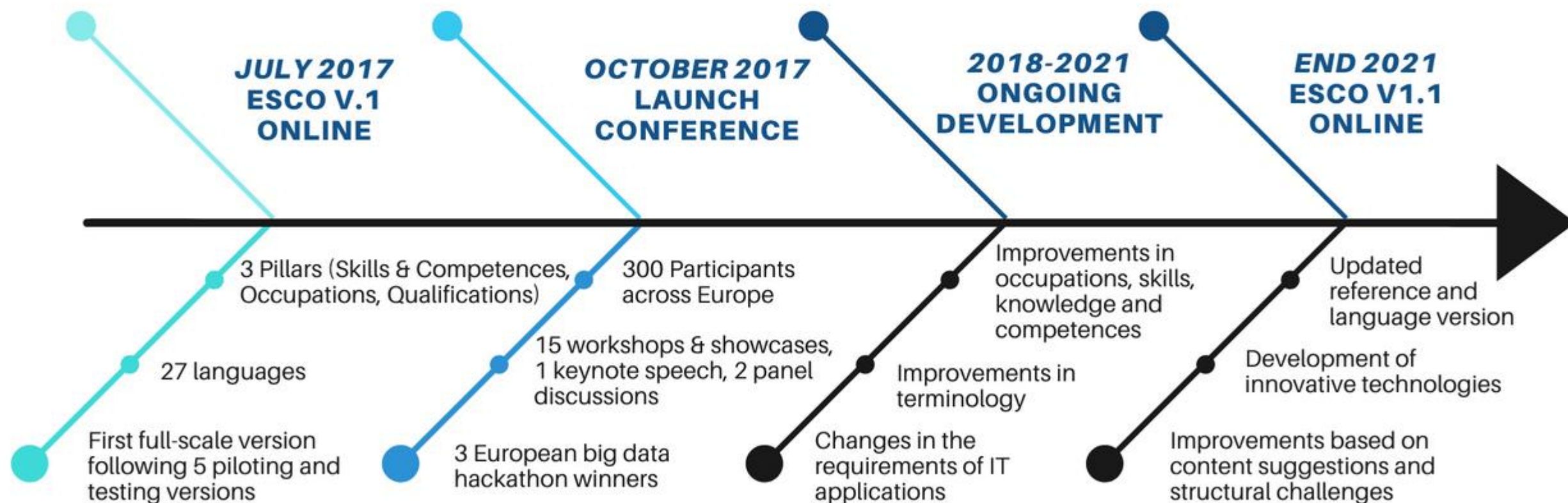
Early stage 2011-2017

Development of version 1.0, for use in systems providing services to end users

Close collaboration with stakeholders and Member States experts

Reference Groups for sectoral expertise and online consultation

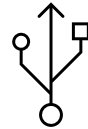Sources: national classification systems, reports, research papers, job vacancies

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THE EVOLUTION OF ESCO

JULY 2017
ESCO V.1
ONLINE

OCTOBER 2017
LAUNCH
CONFERENCE

2018-2021
ONGOING
DEVELOPMENT

END 2021
ESCO V1.1
ONLINE

3 Pillars (Skills & Competences, Occupations, Qualifications)

27 languages

First full-scale version following 5 piloting and testing versions

300 Participants across Europe

15 workshops & showcases, 1 keynote speech, 2 panel discussions

3 European big data hackathon winners

Improvements in occupations, skills, knowledge and competences

Improvements in terminology

Changes in the requirements of IT applications

Updated reference and language version

Development of innovative technologies

Improvements based on content suggestions and structural challenges

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Specific focus of ESCO version 1.1
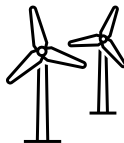
Green transition — Identification of a **taxonomy of skills for the green economy**
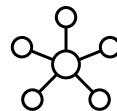
Digital transition — **109 new concepts related to digital technologies**

Emerging technologies — Focus on **occupations and skills for researchers**

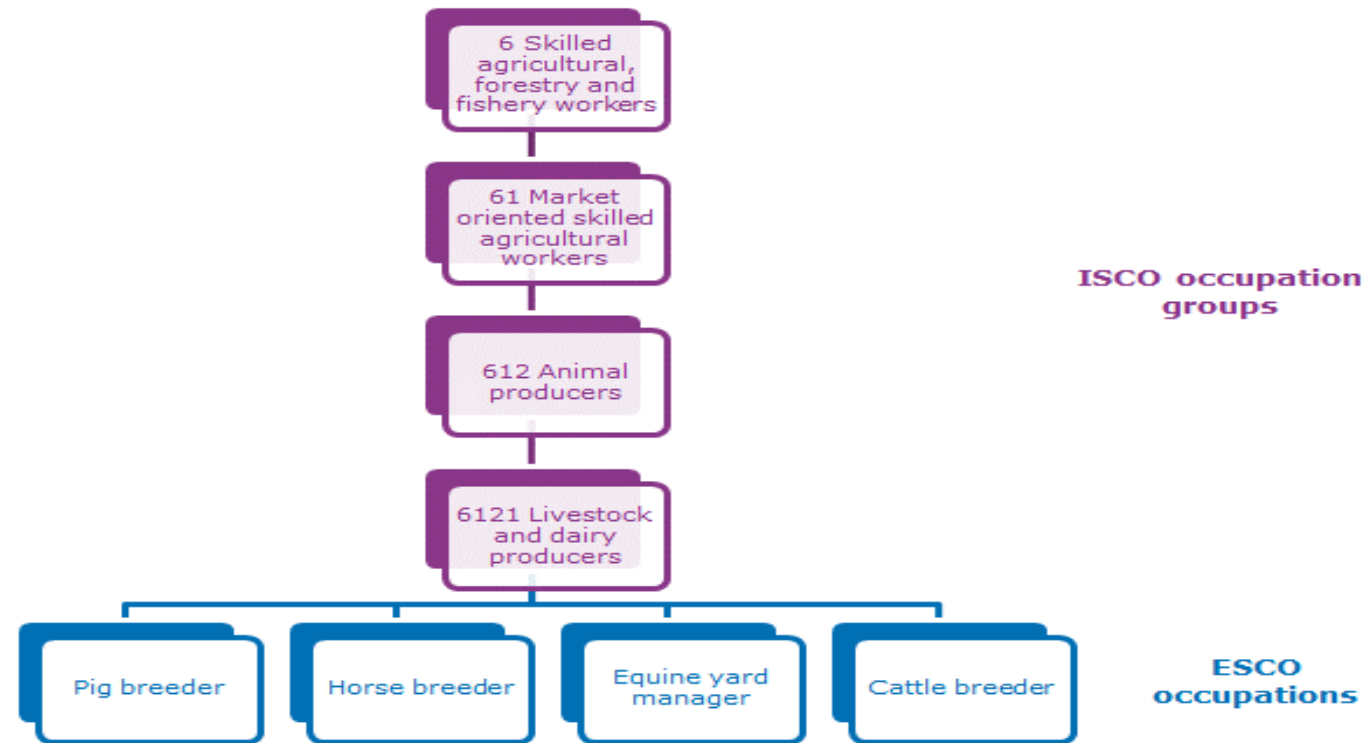**Increasing importance of transversal skills** — **New model for transversal skills and competences**

Artificial intelligence — Application of **artificial intelligence to improve efficiency of the continuous improvement process**

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Occupational Profiles in ESCO

Search

OCCUPATIONS

> 0 - Armed forces occupations
> 1 - Managers
> 2 - Professionals
> 3 - Technicians and associate profe...
> 4 - Clerical support workers
> 5 - Service and sales workers
> 6 - Skilled agricultural, forestry and...
> 7 - Craft and related trades workers
> 8 - Plant and machine operators an...
> 9 - Elementary occupations

Occupations

3008 occupations

The occupations pillar is one of the three pillars of ESCO. It organises the occupation concepts in ESCO. It uses hierarchical relationships between them, metadata as well as mappings to the International Standard Classification of Occupations (ISCO) in order to structure the occupations.

Each occupation concept contains one preferred term and any number of non-preferred terms and hidden terms in each of the ESCO languages.

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ICT project manager

Code

1330.7

Description

ICT project managers schedule, control and direct the resources, people, funding and facilities to achieve the objectives of ICT projects. They establish budgets and timelines, perform risk analysis and quality management, and complete project closure reports.

Alternative label

IT projects manager

IT project manager

web projects manager

web project manager

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apply conflict management

build business relationships

coach employees

create project specifications

estimate duration of work

identify legal requirements

manage ICT project

manage budgets

manage project information

manage staff

perform project management

perform resource planning

perform risk analysis

provide cost benefit analysis reports

recruit employees

train employees

ICT project management

ICT project management methodologies

internal risk management policy

quality standards

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Skills and knowledge concepts in ESCO

Q Search

⊜

🖹 **SKILLS/COMPETENCES**

> K - knowledge
> L - language skills and knowledge
> S - skills
> T - transversal skills and competen...

Skills

13890
skills /
competences

The ESCO skills pillar distinguishes between i) skill/competence concepts and ii) knowledge concepts by indicating the skill type. There is however no distinction between skills and competences. Each of these concepts comes with one preferred term and a number of non-preferred terms in each of the 27 ESCO languages. Every concept also includes an explanation in the form of description.

The skills pillar of ESCO contains 13,890 concepts structured in a hierarchy which contains four sub-classifications. Each sub-classification targets different types of knowledge and skill/competence concepts:

Description

Manage and plan various resources, such as human resources, budget, deadline, results, and quality necessary for a specific project, and monitor the project's progress in order to achieve a specific goal within a set time and budget.

Alternative label

conduct project management

manage projects

perform management of projects

perform projects management

project manage

performing project management

do project management

Skill type

skill

Skill reusability level

cross-sector skills and competences

Broader skills/competences

keep records of work progress

S4.2.1 - directing operational activities

Narrower skills/competences

manage artistic project

manage engineering project

manage fisheries projects

New transversal skills framework

- **Report** expert group
- **Feedback** MSWG, MAI, and EQF AG
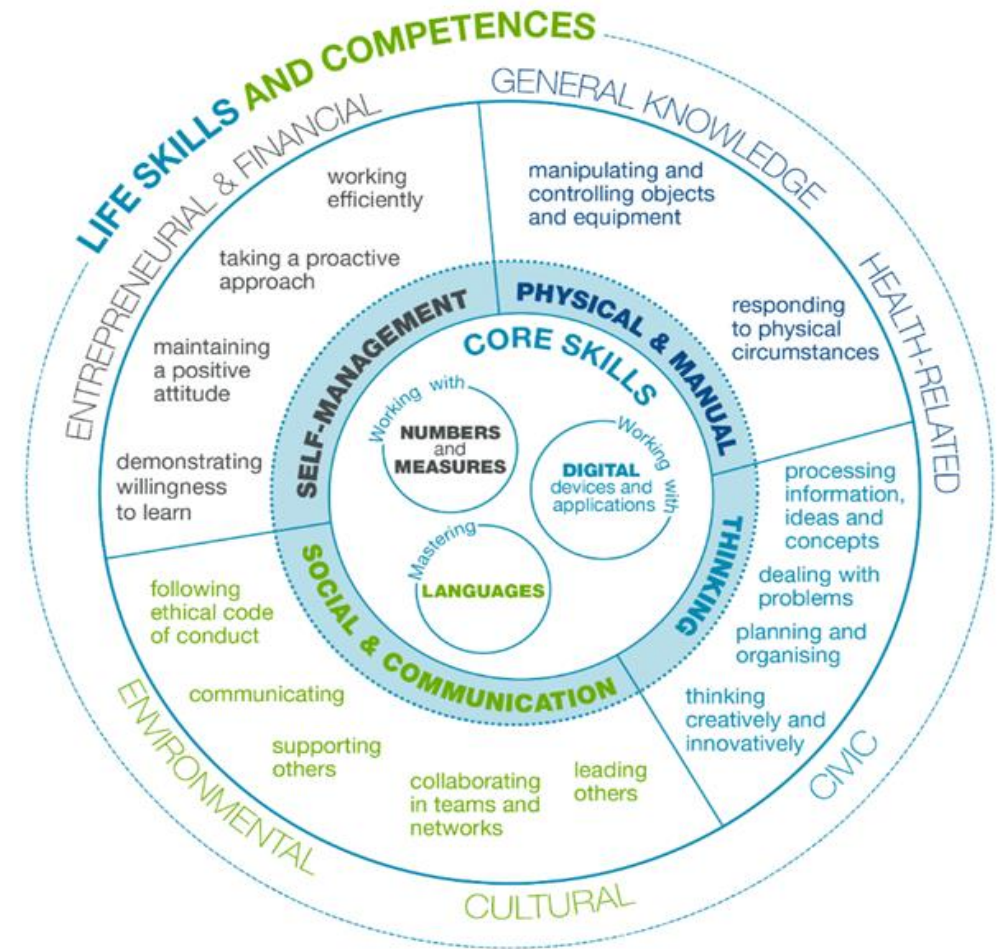- ESCO skills quality review

- Complete identification of transversal skills
- Formulate **descriptions** and **scope notes**
- **Apply terminological guidelines** and assign alternative labels

- 6 top-level categories
- 24 clusters
- 95 transversal skills

- **Integrate** transversal skills in the **ESCO skills pillar**

LIFE SKILLS AND COMPETENCES

ENTREPRENEURIAL & FINANCIAL

GENERAL KNOWLEDGE

HEALTH-RELATED

CIVIC

CULTURAL

ENVIRONMENTAL

working efficiently

taking a proactive approach

maintaining a positive attitude

demonstrating willingness to learn

following ethical code of conduct

communicating

supporting others

collaborating in teams and networks

leading others

manipulating and controlling objects and equipment

responding to physical circumstances

processing information, ideas and concepts

dealing with problems

planning and organising

thinking creatively and innovatively

PHYSICAL & MANUAL

SELF-MANAGEMENT

CORE SKILLS

THINKING

SOCIAL & COMMUNICATION

Working with NUMBERS and MEASURES

Working with DIGITAL devices and applications

Mastering LANGUAGES

Defining green skills

"the knowledge, abilities, values and attitudes needed to live in, develop and support a sustainable and resource-efficient society" *(Cedefop, 2012)*

Technical skills	Cross-sectoral skills	Transversal skills
e.g. design water conservation systems	e.g. Research and innovation skills	e.g. environmental awareness

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Methodology

Hybrid approach, supported by data science

ESCO v1.1

Human labelling
- Manual identification of existing ESCO skills

Machine labelling
- Train AI model
- Identify green skills based on labour market data

Manual evaluation of differences

Taxonomy of skills for the green transition

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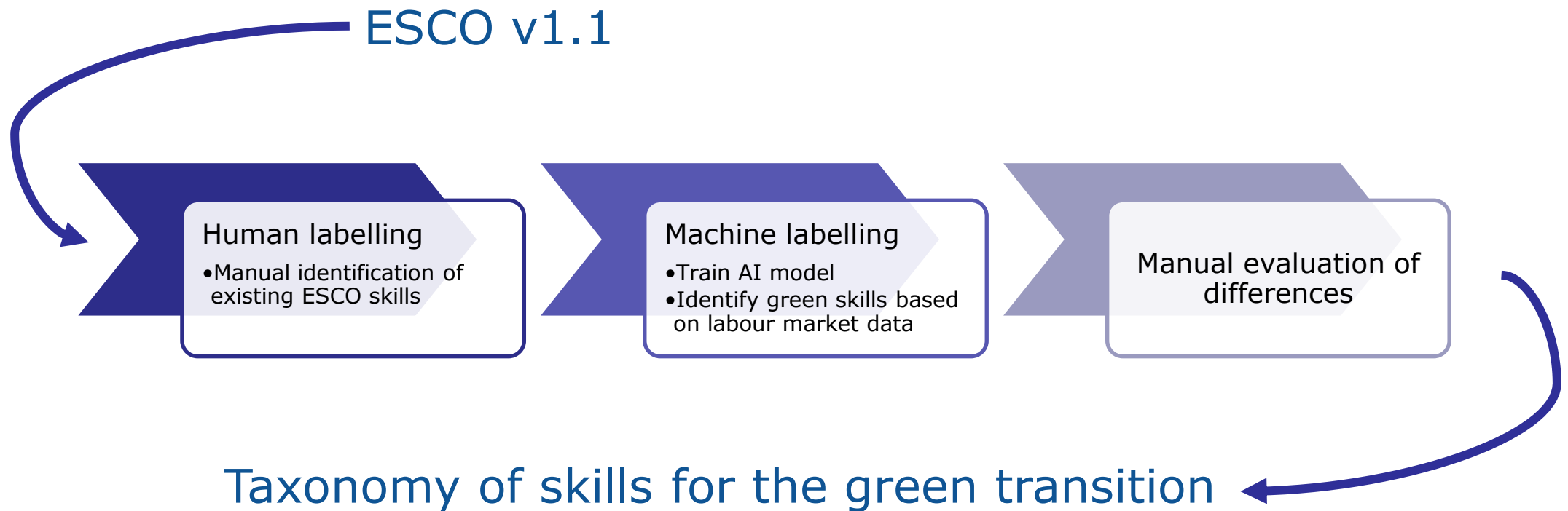
How can ESCO be used?

How ESCO can be used

Job matching	**Matching at skills level**	**Information on learning opportunities**	**Guidance & counselling**	**Performance management, appraisals**	**Forecasting & planning**

Labour Market — Occupations — **Skills/ Competences** — Qualications — **Education/ Training**

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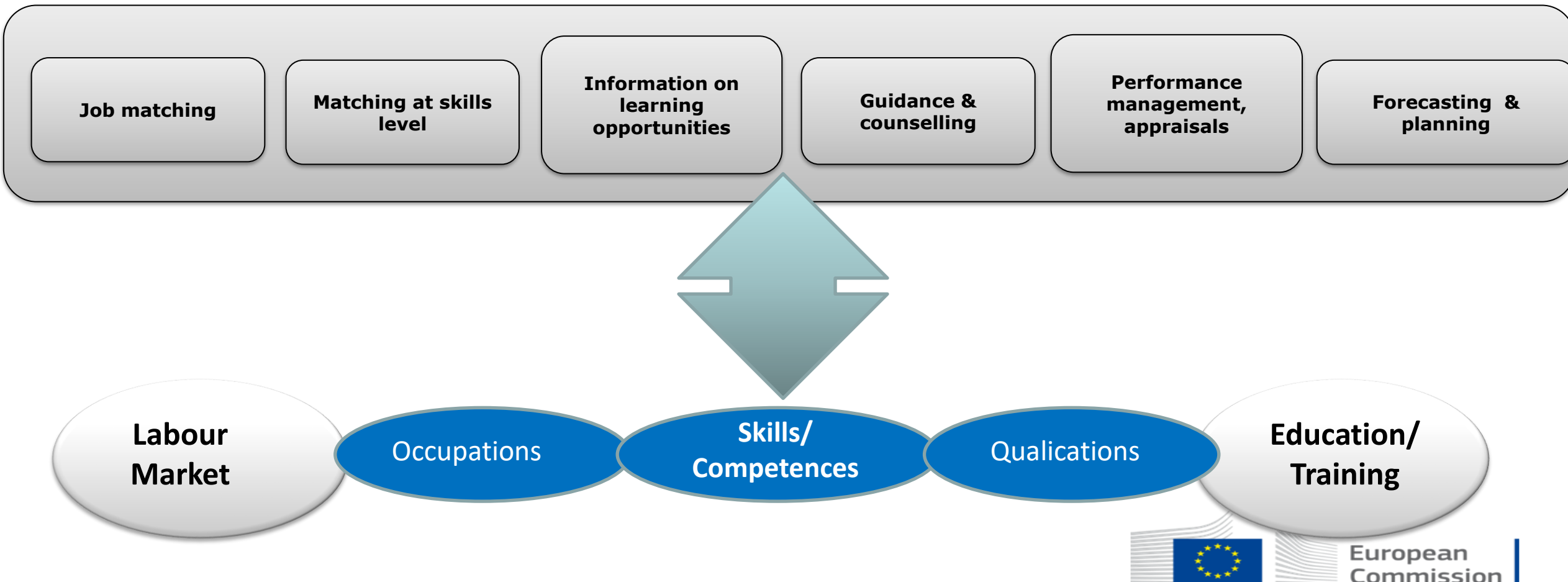
CURRENT ESCO IMPLEMENTATION- OCTOBER 2020

- All the European PES by the end of 2021
- 5 Implementations in EU Public Administrations (e.g. EURES, CEDEFOP EUROPASS)
- 5 Education Institutions

More than 80 implementers across Europe

- 24 public organisations
- 42 Private Companies
- 4 Public & 1 Private Employment Service use ESCO directly in their system
- 15 + EU-Funded Projects

https://ec.europa.eu/esco/portal

Job-matching and searching

Validation of informal/non-formal/formal learning

Graduate tracking

Ontology management & machine learning

Career learning & development management

Curricula development

Statistical research

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Use of ESCO by EU services

Job-matching & searching	Job-matching; career learning & development management	Career learning & development management
EURES	**EUROPASS**	**DG HR-EU Learn**

Statistical research	Job-matching; Career learning & development management	Skills assessment
CEDEFOP - OVATE	**DG EAC – EIT Inno-energy**	**EU 3rd country nationals tool**

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ESCO supports start-ups & SMEs
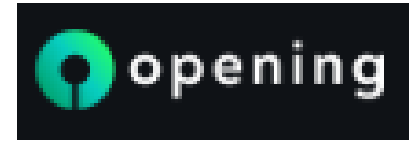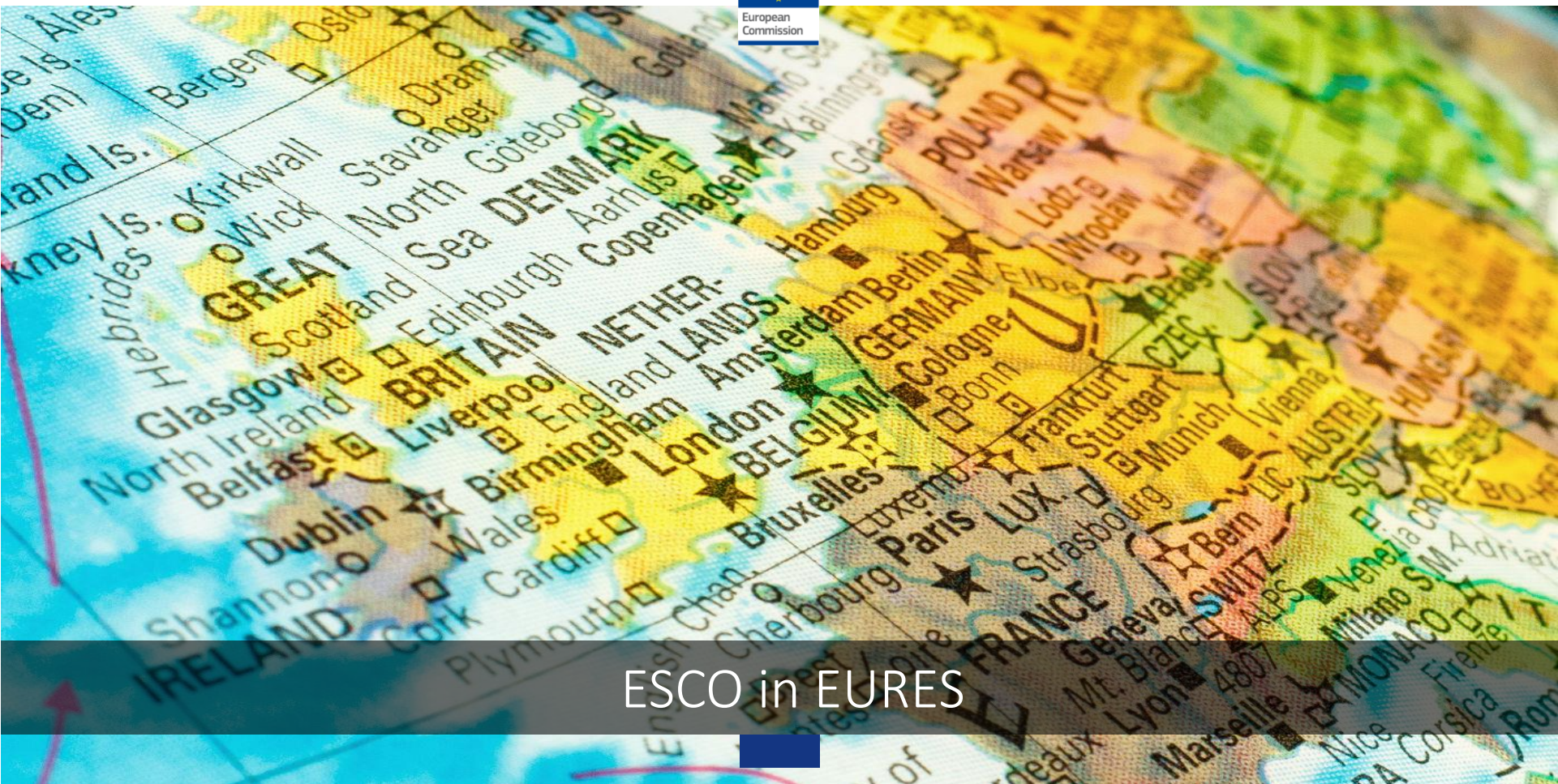
ESCO in EURES

EURES Regulation (2016/589)

Article 19

Overall objective: enable automated matching on the EURES Portal

Implementing decisions

❑ COMMISSION IMPLEMENTING DECISION (EU) 2018/1020 of 18 July 2018 on the **adoption and updating of the list** of skills, competences and occupations of the European classification […]

❑ COMMISSION IMPLEMENTING DECISION (EU) 2018/1021 of 18 July 2018 on the **adoption of technical standards and formats** necessary […]

❑ 3 year timeframe for the establishment of an initial mapping to and from the European classification – deadline: 18 August 2021

❑ Technical + financial assistance provision

Technical support for mapping (1)

Commission services to provide:

1. ESCO Implementation manual

2. Mapping platform accompanied by a user manual

3. Technical standards and formats necessary for the operation of the EURES common IT platform

Manuals available at:

https://ec.europa.eu/esco/portal/escopedia/Mapping_to_ESCO

Technical support for mapping (2)

Commission services provided:

7. Mapping pilots with EU Member States:

➢ Occupation mapping pilot (2014-2015) and

➢ Skills mapping pilot (2018)

Reports available at:

https://ec.europa.eu/esco/portal/escopedia/ESCO_occupations_mapping_pilot

https://ec.europa.eu/esco/portal/escopedia/ESCO_skills_mapping_pilot
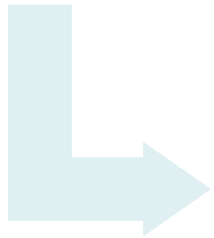
Application of AI in ESCO

ESCO: an expert driven classification

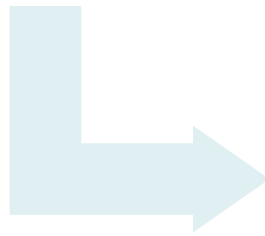# ESCO v1.1: efficiencies through data science & AI

Receive and structure inputs

- **Streamline** different **data formats**
- **Process and prepare (vacancy) data** to create specific models

Analyse inputs

- Remove redundant information in the input
- Detect what is **already included** in ESCO

Update the classification

- Support **terminological development**
- **Content labelling** (e.g. green skills)
- **Translate alternative labels**
- **Establish relationships** (occupation–skill; skill-skill contextualisation)

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THANK YOU