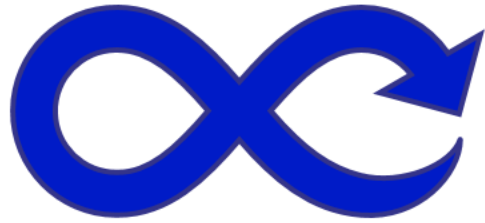# ESCO v1.1 launch event

10 February 2022

What's new in ESCO v1.1

Objectives of ESCO version 1.1

Supporting continuous change

Changes in the labour market: new & obsolete occupations, changing nature

Changes in curricula: new knowledge and skills in education-training

Changes in terminology: changes in terms referring to occupations and skills

Changes in requirements by implementers and technological development

Opportunity to correct identified mistakes: misspellings or wrong metadata

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68

New occupations

354

New skills

158

New knowledge concepts

2

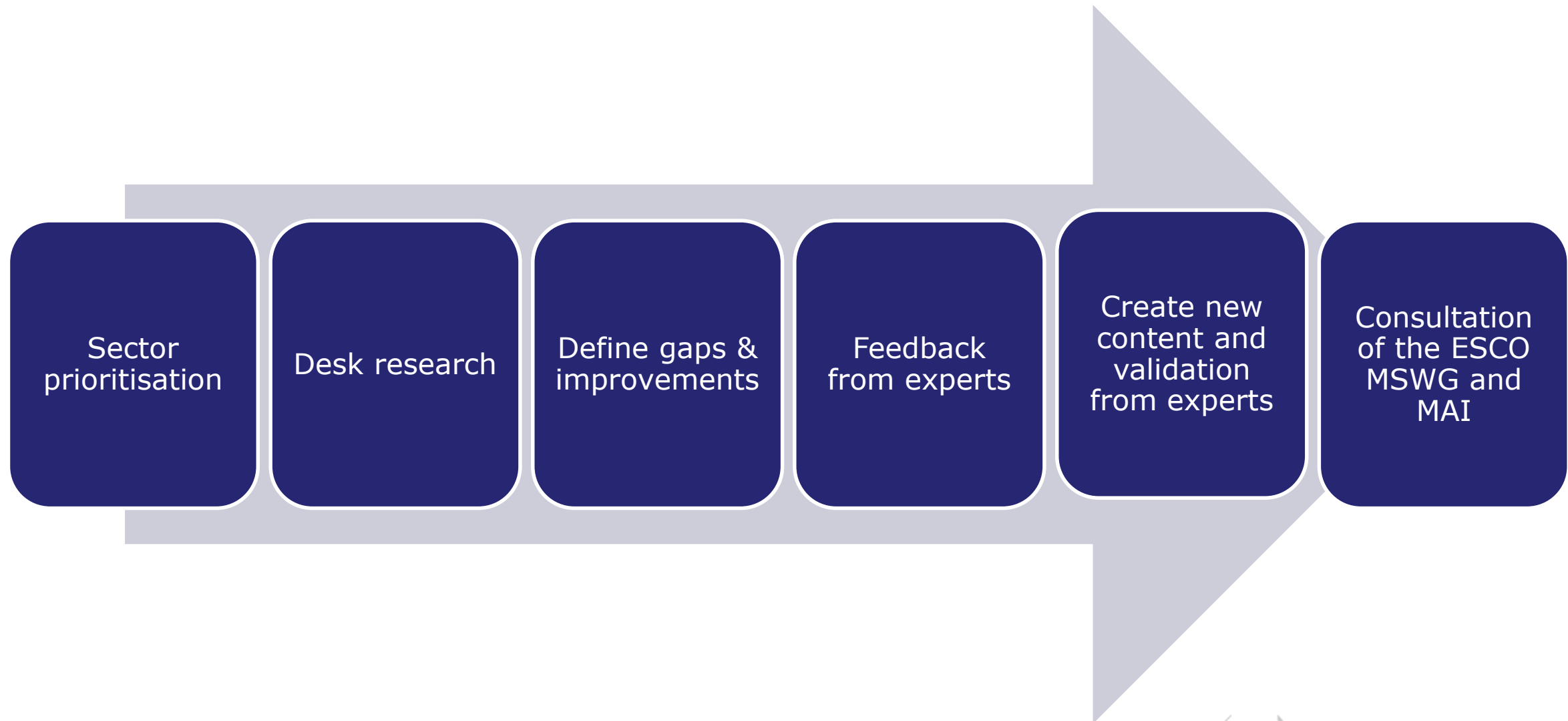Obsolete occupations

106

Obsolete skills & knowledge concepts

ESCO v1.1

UPDATING THE CLASSIFICATION

Quality review

Quality issues

Skills Knowledge Occupations Relationships …

Ambiguous skills
Formulation issues
Conceptual issues
PTs that are also NPTs

Some skills are not skills
Duplicate concepts
Level of detail

Use of relationships
Link occupations & ISCO codes
Skill reuse level

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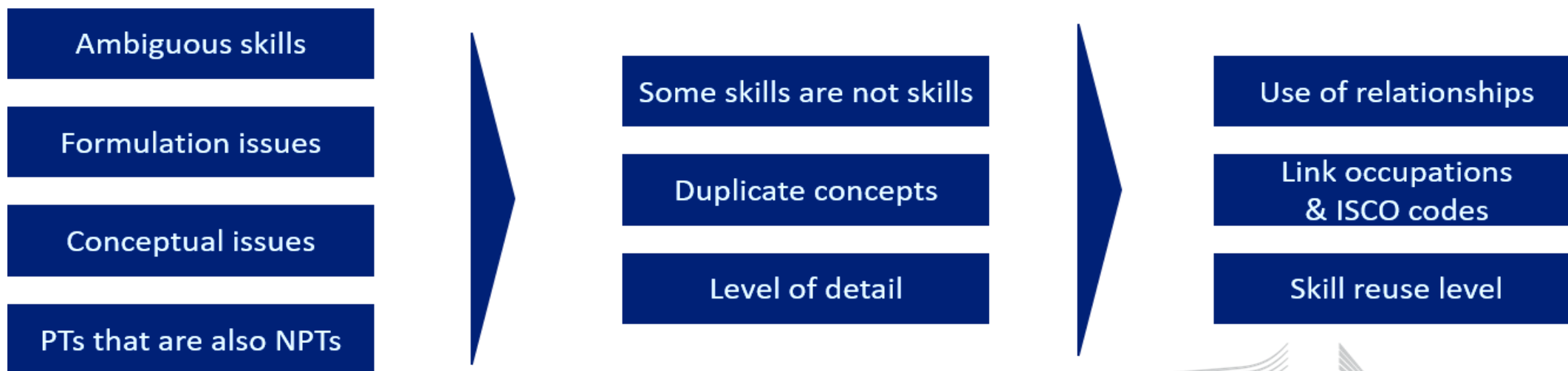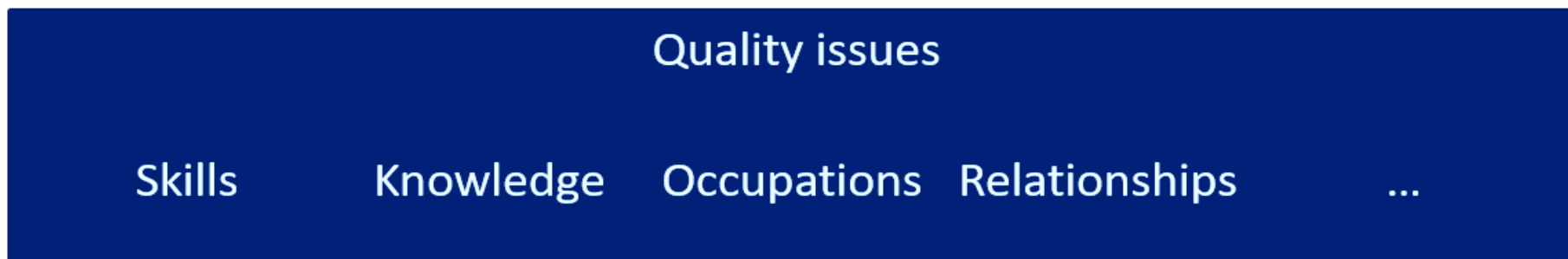
ESCO version 1.1: process for the content update

Information sources

- **Desk research** (Publications from international organisations, industry reports, online JVs)
- **Targeted feedback** (Domain experts, PES, ESCO implementers) through the online fora or bilateral contacts.
- **Blueprints** for sectoral cooperation on skills
- Contacts with **Commission services**
- **Targeted webinars** (METIS project, REGIO CoP, FLIP project)
- **Competence frameworks** (ECF for public procurement, PM2 methodology guide)
- **Expert groups** (skills hierarchy, transversal skills)
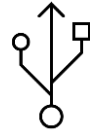- **KPIs**

Specific focus of ESCO version 1.1

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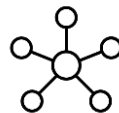
Digital transition — **109 new concepts related to digital technologies**

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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A new framework for transversal skills and competences

New transversal skills framework

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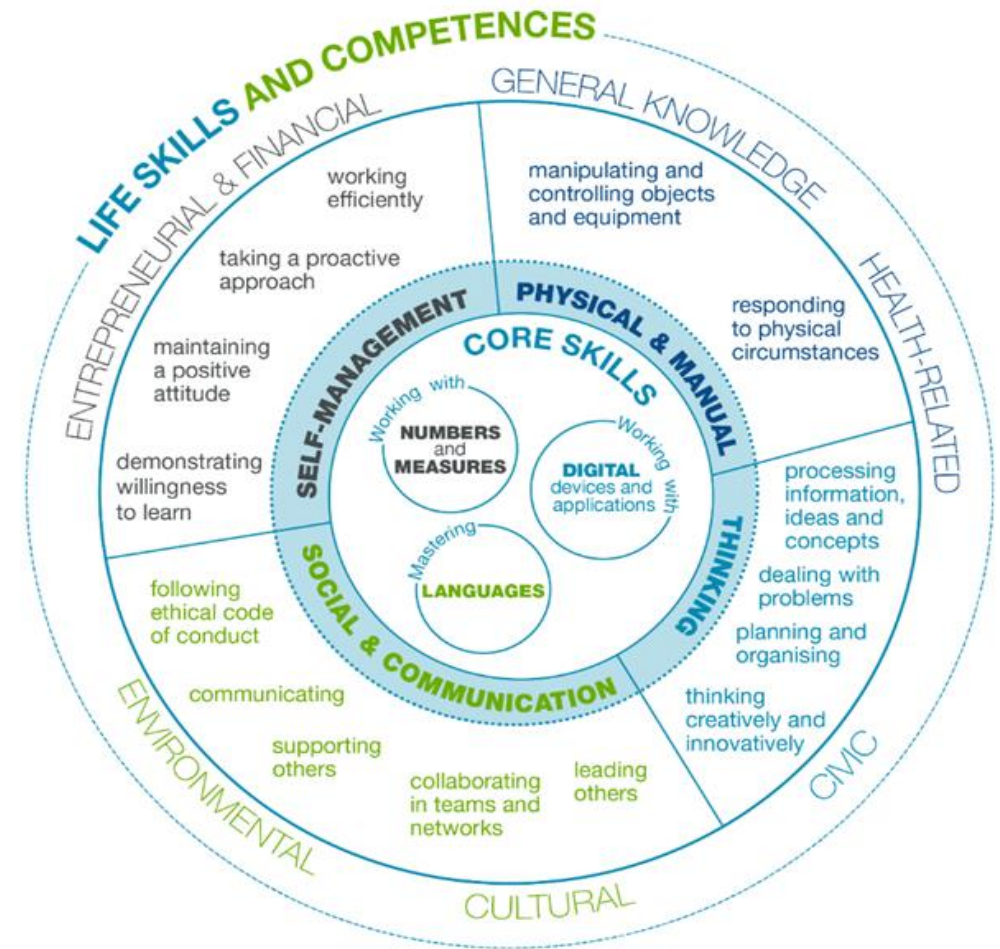- ESCO skills quality review

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

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

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

Integrating the new transversal skills framework

SKILLS/COMPETENCES

- ⌄ A - attitudes and values
  - ⌄ A1 - attitudes
    - › A1.0 - attitudes
    - › A1.1 - adapt to change
    - › A1.2 - attend to detail
    - › A1.3 - attend to hygiene
    - › A1.4 - cope with pressure
    - › A1.5 - deal with uncertainty
    - › A1.6 - demonstrate curiosity
    - › A1.7 - demonstrate enthusia...
    - › A1.8 - demonstrate willingne...
    - › A1.9 - make an effort
    - › A1.10 - manage frustration
    - › A1.12 - manage quality
    - › A1.13 - meet commitments
    - › A1.14 - persist
    - › A1.15 - work efficiently
    - › A1.16 - work independently
  - › A2 - values
- › K - knowledge
- › L - language skills and knowledge
- › S - skills

Replacing **attitudes and values** in the skills hierarchy

- "**Language skills and knowledge**" remains
- **Existing transversal skills** are reused, removed, or transformed to cross-sectoral skills
- **Cross-sectoral skills** are linked to occupations
- New transversal skills are **contextualised**

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**Defining a taxonomy
of skills for the green
transition**

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

e.g. design water conservation systems

Cross-sectoral skills

e.g. Research and innovation skills

Transversal 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
- Build ML classifier
- Identify green skills based on labour market data

Manual evaluation of differences

Taxonomy of skills for the green transition

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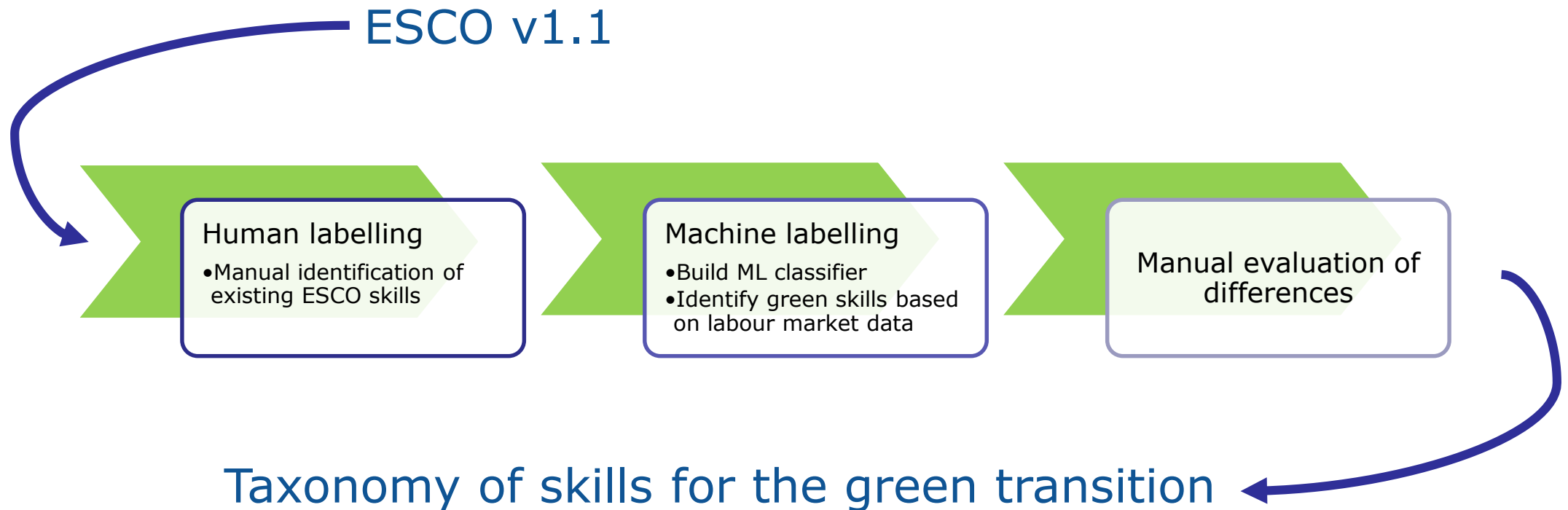
Green skills in ESCO v1.1

386 skills

install offshore renewable energy systems: Install systems which generate electrical energy through offshore renewable energy technologies, ensuring compliance with regulations, and correct installation of the power system.

use sustainable materials and components: Identify, select environmentally friendly materials and components. Decide on the substitution of certain materials by the one that are environmentally friendly, maintaining the same level of functionality and other characteristics of the product.

engage others in environmentally friendly behaviours: Inform about and promote environmentally friendly behaviours in social networks and at work.

185 knowledge concepts

geothermal energy systems:*Low temperature heating and high temperature cooling, generated by use of geothermal energy, and their contribution to energy performance.*

agroecology: *The study and application of ecological and agronomic concepts and principles to agricultural production systems.*

pollution prevention: *The processes used to prevent pollution: precautions to pollution of the environment, procedures to counter pollution and associated equipment, and possible measures to protect the environment.*

A taxonomy of skills
for researchers

Policy context

European Skills Agenda

Action 5 – Rolling up the European Universities initiative and **upskilling scientists**

To upskill scientists, in close cooperation with stakeholders and the Member States, the Commission will:
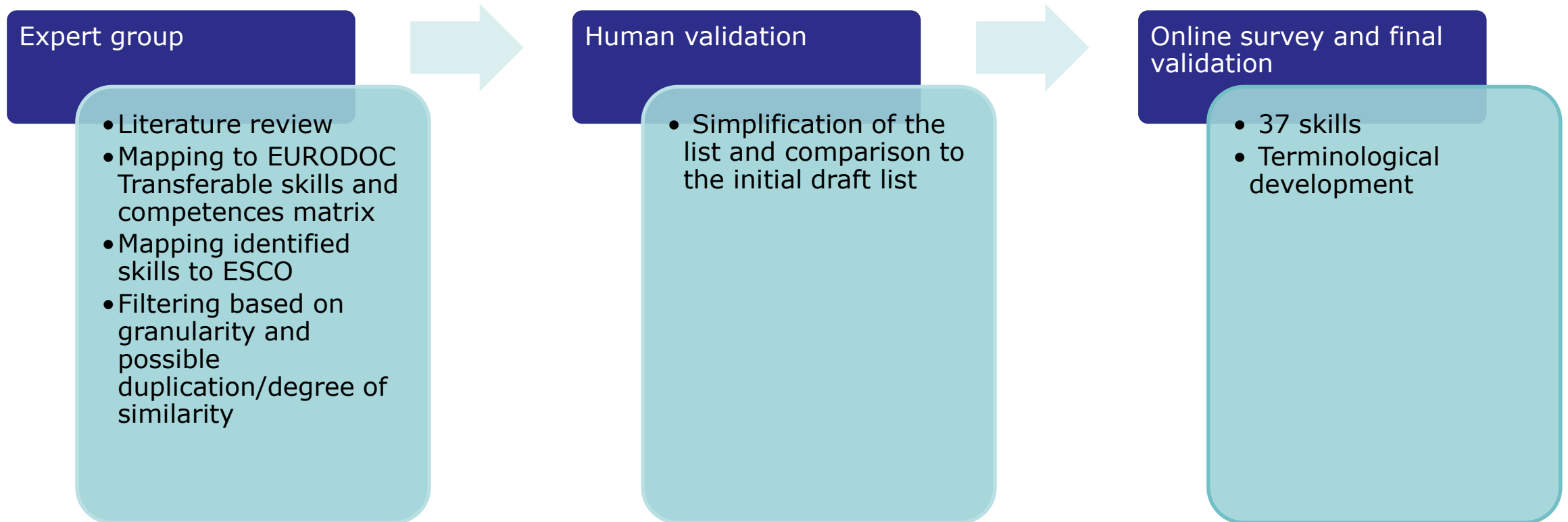- *develop a European Competence Framework for researchers and support the development of a set of core skills for researchers.*
- ***define a taxonomy of skills for researchers**, which will allow the statistical monitoring of brain circulation and agree with Member States on a set of indicators to allow monitoring and statistical analysis.*
- *develop open science and science management curricula for researchers.*

ERA Communication

Action 8– Deliver a toolbox of measures to support researcher's careers, through a mobility schemes, training and more, in order to make Europe more attractive for talent

- *Taxonomy/classification of skills for researchers in ESCO v1.1.*
- *Develop a competency framework for scientists.*

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Defining research skills

Expert group

- Literature review
- Mapping to EURODOC Transferable skills and competences matrix
- Mapping identified skills to ESCO
- Filtering based on granularity and possible duplication/degree of similarity

Human validation

- Simplification of the list and comparison to the initial draft list

Online survey and final validation

- 37 skills
- Terminological development

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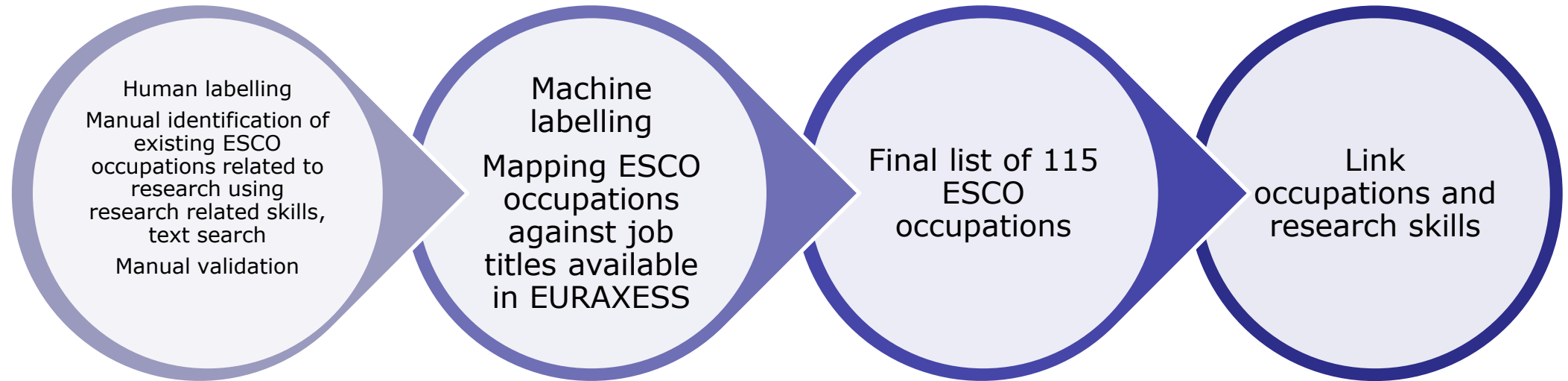
Skills for researchers

disseminate results to the scientific community	Publicly disclose scientific results by any appropriate means, including conferences, workshops, colloquia and scientific publications.
manage open licensing	Manage the process of licensing research outputs, taking into considerations how licences work, how to apply them, and how they may affect research output reuse.
manage research data	Produce and analyse scientific data originating from qualitative and quantitative research methods. Store and maintain the data in research databases. Support the re-use of scientific data and be familiar with open data management principles.

Example of new skills ESCO v1.1

write scientific publications	Present the hypothesis, findings, and conclusions of your scientific research in your field of expertise in a professional publication.
perform scientific research	Gain, correct or improve knowledge about phenomena by using scientific methods and techniques, based on empirical or measurable observations.
speak different languages	Master foreign languages to be able to communicate in one or more foreign languages.

Example of ESCO v1.0 kills

Defining research occupations

Human labelling
Manual identification of existing ESCO occupations related to research using research related skills, text search
Manual validation

Machine labelling
Mapping ESCO occupations against job titles available in EURAXESS

Final list of 115 ESCO occupations

Link occupations and research skills

Type	Count
Engineer	16
Lecturer	38
Researcher/Scientist	60
Medical	1
Grand Total	115

Artificial intelligence in ESCO

ESCO: an expert driven classification

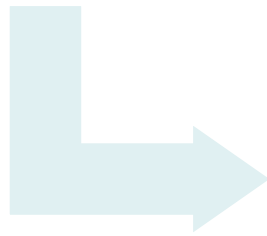# ESCO v1.1: efficiencies through data science & AI

Receive and structure inputs

- **Streamline** different **data formats**
- **Process and prepare (vacancy) data** to create/ train 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 for
your attention!