



# Overview of the ESCO quality assurance process

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## Purpose of this document

On the joint meeting of the ESCO Board (BOA) and the ESCO Maintenance Committee (MAI) participants agreed that a document on the quality assurance steps for developing ESCO v1 would add value. The document would be prepared jointly by the MAI and the Commission.

The current draft is a high-level summary of the quality assurance approach. In annex it provides an overview of the more detailed documents on each quality assurance step.

The Commission services discussed this document with the MAI members during their 21<sup>st</sup> meeting on 14-15 September 2016 and gathered their comments and refined the document. The Commission services and the MAI are submitting this final draft to the BOA for information.

## Introduction

The Commission is currently developing the ESCO classification to simplify and support job mobility across Europe, as well as the communication between the world of education and the world of work. For this, ESCO should provide a reference vocabulary to facilitate comparability and transparency between labour market requirements and education and training outputs. ESCO will also contribute to the general objectives of the recently launched New Skills Agenda for Europe, to the modernisation of Europass as well as the implementation of the updated EURES Regulation.

To ensure the quality of the content developed for ESCO<sup>1</sup> the Commission has relied for its development on the knowledge and expertise of labour market and education experts, representatives from public and private employment services, statistical offices, social partners, linguists, education and training bodies and other pertinent stakeholders. The Commission services invited some of these experts to become members of the MAI, whose mission is to monitor the development process of ESCO and its quality assurance measures. Together with the MAI, the Commission services engaged about 750 labour market and education experts<sup>2</sup> from all over Europe to develop and/or evaluate the quality of the ESCO occupations and ESCO knowledge, skills and competences (skills/competences). In addition, we engaged a group of experts on skills to develop the transversal skills thesaurus. Furthermore the Commission has used professional translators, as well as its own translation services

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<sup>1</sup> ESCO's occupations and the knowledge, skills and competences have been specifically developed, whereas ESCO's qualifications are developed by their respective owners and republished in ESCO following specific publication criteria.

<sup>2</sup> This number includes all members of the Sectoral Reference Groups and experts that actively participated in the ESCO Online Consultation. It does not include experts contributing to bilateral meetings on the development of ESCO.

to create the relevant term sets for the concepts. This work was done with support of labour market experts.

## Quality assurance for ESCO v1

One of the first use cases of ESCO is the exchange of information within the EURES network. The following functionalities are fundamental for the implementation of the ESCO related parts of the EURES Regulation:

- Data-entry, to support users of EURES Job Mobility Portal when they create a job vacancy or a job seeker profile.
- Transcoding, to support employment services to express their data in terms of the ESCO concepts.
- Job matching, to support the services proposing relevant job vacancies to job seekers and vice versa.

To ensure successful implementation of these functionalities, ESCO should have the right level of conceptual coverage, the right level of detail, the right terms in all 26 languages<sup>3</sup>, and the occupation concepts properly mapped to the International Standard Classification of Occupations (ISCO-08). Additionally, ESCO needs to have the appropriate level of terminological richness and the required supporting taxonomies integrated, to support the usability of the EURES-interfaces.

In order to achieve a proper level of quality for these aspects, the Commission services and the MAI have worked together to:

- Identify and monitor the project risks and put in place mitigating actions.
- Report to the BOA on the status and progress of the ESCO project and on the implementation of the MAI recommendations.
- Define the data-model and the business rules for ESCO that ensure that users and developers of ESCO can work efficiently with the vocabulary.
- Define guidelines for the development of the occupations and skills/competences that ensure that all experts involved in the development of ESCO have a single shared reference on the development process and specifications of the vocabulary.
- Review the draft classification for the 16 sectors developed by the Taxonomy Expert Group before it was uploaded to the online consultation platform. Each MAI member adopted two sectors that they reviewed in depth and provided feedback to the SEC.
- Select experts to develop and/or evaluate the draft occupations and skills/competences, to ensure receiving quality input from all over Europe and from all sectors of economic activity.
- Organise the online consultation by labour market experts across Europe, to verify the relevancy and correctness of the concepts drafted.
- Steer the work of the experts involved in the Reference Groups and in the ESCO online consultation (e.g. the SEC joined all the experts' meetings and promptly replied to any questions submitted via the online consultation platform).

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<sup>3</sup> The 24 official European languages plus Icelandic and Norwegian.

- Define quality assurance steps, checklists, reporting templates, and tools for the ESCO Secretariat (SEC) to validate compliance of the developed occupations and skills/competences to the guidelines.
- Define quality assurance steps, reporting templates, and tools for the MAI to ensure that they were empowered to obtain detailed insight into the way the process was executed and on the deliverables it produced.
- Review intermediate work results and monitor their relevance for the labour market and their compliance with the ESCO Guidelines (e.g. in each of their meetings, and on the online platform, the MAI members reviewed intermediate work results and provided feedback and guidance to the experts involved in the Reference Groups). The Reference Groups' members joined two MAI meetings to present their work results and reply to the MAI members' questions.
- Address resolution of difficult cases. E.g. when needed, some MAI members have joined the sectoral experts' meetings to help them tackle difficult discussions. Additionally, the SEC facilitated an informal cooperation between the MAI, the Reference Groups and the Taxonomy Expert Group.
- Quality assure the mapping to ISCO-08 by an ISCO-expert from the ILO<sup>4</sup>, to ensure that ESCO's vision of being an extension to ISCO-08 is properly realised.
- Complete a gap analysis between the ESCO classification, ISCO-08 and 8 National Classifications<sup>5</sup>, to ensure the completeness of ESCO, identify discrepancies in the level of granularity between ESCO, ISCO-08 and the national classifications and to enrich the ESCO classification with additional non-preferred terms.
- Check compliance of the formulated English terms with ISCO-08, to ensure that English terms captured in the ESCO classification do not introduce ambiguity on the scope and meaning of the concepts in ESCO.
- Involve linguists to develop general and language specific guidelines for the terms in the various languages.
- Have linguists formulate the terms for the various languages.
- Provide linguists involved in the terms formulation process with access to labour market experts in a given language, to assist in the translation process.

To support the process agreed with the MAI, the Commission services have developed the following tools to streamline the process:

- The ESCO data-model.
- Guidelines supporting the development and quality assurance of the occupations and skills/competences.
- Process steps to evaluate the quality of the work done, and to remediate issues found.
- Reporting templates on various aspects of the quality steps and participation by the experts.

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<sup>4</sup> International Labour Organisation

<sup>5</sup> National classifications: Swedish, Romanian, German, Austrian, Czech Republic, France, the Netherlands and Spain.

- Software systems verifying that the content complies with the data-model and business rules.
- Software systems that support experts providing feedback on the developed concepts.
- Software systems that support the Member States Working Group (MSWG) to browse and evaluate the classification as a whole.

The above activities and related tools address:

- Checking the coverage, scope and relevancy of the defined occupations and skills/competences for the European labour market and mapping national classifications.
- The quality of the descriptions formulated for the occupations and skills/competences in English.
- The quality of the terms formulated for the occupations and skills/competences in the other ESCO languages.
- The consistency and completeness of the classification.

Additionally, the Commission services have checked if ESCO (and its implementation) is fit-for-purpose. For this the Commission services in cooperation with the MAI have:

- Researched the feasibility of creating correspondence tables reflecting the mapping between concepts of national classifications onto ESCO concepts, and how these correspondence tables can be used to exchange curriculum vitae data and job vacancy data between public employment services from different member states.
- Cooperated with the International Labour Organisation to make sure ESCO complies with the international standards for statistical research and systems interoperability.
- Researched how ESCO concepts can be used to support job matching across systems and languages.
- Researched how ESCO concepts can be used to support labour market intelligence projects.
- Researched how ESCO could use a competence-based job matching method to find the best match between jobseekers and vacant jobs by comparing knowledge, skills and competences of the candidate with the requirements of the employer.
- Informally experimented on how ESCO can be used to support in online CV building based on skills/competences and occupations, enabling an IT systems to be more accurate in its matching criteria.

## Annex: List of documents reporting on quality assurance steps

Document reference	Document date	Title of the document
ESCO (2012) SEC 065	03/12/2012	Overview of quality management in the ESCO project
ESCO (2013) SEC 065	30/08/2013	Feedback from the ESCO Maintenance Committee to the Reference Group Human health and social services activities
ESCO (2013) SEC 066	29/08/2013	Feedback from the ESCO Maintenance Committee to the Reference Group Manufacturing of textile, apparel, leather, footwear and other related products
ESCO (2013) SEC 067	30/08/2013	Feedback from the ESCO Maintenance Committee to the Reference Group Veterinary activities
ESCO (2014) SEC 008	12/03/2014	Quality Assurance for ESCO The document refers to the document "Overview of quality management in the ESCO project" presented on the 6th Maintenance Committee meeting
ESCO (2014) SEC 010	14/03/2014	Semantic interoperability with ESCO: pilot phase Implementation of the pilot phase Step 4: Quality improvement and validation
ESCO (2014) MAI 001	08/07/2014	ESCO Maintenance Committee feedback from 12 <sup>th</sup> ESCO Maintenance Committee meeting to Sectoral Reference Group Human health care and Social services
ESCO (2014) MAI 002	08/07/2014	ESCO Maintenance Committee feedback from 12 <sup>th</sup> ESCO Maintenance Committee meeting to Sectoral Reference Group Agriculture, forestry and fisheries
ESCO (2014) MAI 003	08/07/2014	ESCO Maintenance Committee feedback from 12 <sup>th</sup> ESCO Maintenance Committee meeting to Sectoral Reference Group Arts, entertainment and recreation
ESCO (2014) MAI 004	08/07/2014	ESCO Maintenance Committee feedback from 12 <sup>th</sup> ESCO Maintenance Committee meeting to Sectoral Reference Group Hospitality and tourism
ESCO (2014) MAI 005	08/07/2014	ESCO Maintenance Committee feedback from 12 <sup>th</sup> ESCO Maintenance Committee meeting to Sectoral Reference Group ICT service activities
n.a.	28/07/2014	ESCO quality assurance checklist
n.a.	16/10/2014	Quality assurance report (template)
ESCO (2014) SEC 050	16/10/2014	ESCO quality assurance report: Hospitality and tourism
ESCO (2014) SEC 051	16/10/2014	ESCO quality assurance report: ICT service activities
ESCO (2014) SEC 052	16/10/2014	ESCO quality assurance report: Manufacturing of food, beverages and tobacco

ESCO (2014) SEC 052 b	16/10/2014	ESCO quality assurance report: Veterinary activities
ESCO (2014) SEC 053	16/10/2014	ESCO quality assurance report: Agriculture, forestry and fisheries
n.a.	11/2014	Sign-off meeting reporting template for Sectoral Reference Groups
ESCO (2015) SEC 009	12/02/2015	ESCO quality assurance report: Mining and heavy industry
ESCO (2015) SEC 010	12/02/2015	ESCO quality assurance report: ICT Services
ESCO (2015) SEC 011	13/02/2015	ESCO quality assurance report: Wholesale, retail trade, and rental and leasing
ESCO (2015) SEC 012	13/02/2015	ESCO quality assurance report: Arts, entertainment and recreation
ESCO (2015) SEC 013	17/02/2015	ESCO quality assurance report Human health care and Social services
ESCO (2014) SEC 014	17/02/2015	ESCO quality assurance report: Veterinary activities
ESCO (2015) SEC 015	12/02/2015	ESCO quality assurance report: Agriculture, forestry and fisheries
ESCO (2015) SEC 016	16/02/2015	ESCO quality assurance report: Transportation and logistics
ESCO (2015) SEC 017	16/02/2015	ESCO quality assurance report: Manufacturing of textile, apparel, leather, footwear and leather products
n.a.	02/2015	Sign-off meeting reporting template for Sectoral Reference Groups – the sign-off of occupation groups and occupations
n.a.	02/2015	Sign-off meeting reporting template for Sectoral Reference Groups – the sign-off of complete occupational profiles
n.a.	10/04/2015	ESCO quality assurance checklist (update)
ESCO (2015) SEC 053	12/05/2015	ESCO quality assurance report: Manufacturing of food, beverages and tobacco
ESCO (2015) SEC 054	12/05/2015	ESCO quality assurance report Human health care and Social services
ESCO (2015) SEC 055	12/05/2015	ESCO quality assurance report: Transportation and logistics
ESCO (2015) SEC 056	13/05/2015	ESCO quality assurance report: Manufacturing of textile, apparel, leather, footwear and leather products
ESCO (2015) SEC 057	15/05/2015	ESCO quality assurance report: Wholesale, retail trade, and rental and leasing
ESCO (2015) SEC 058	11/05/2015	ESCO quality assurance report: Mining and heavy industry
ESCO (2015) SEC 059	13/05/2015	ESCO quality assurance report: Arts, entertainment and recreation
n.a.	17/06/2015	Presentation: Briefing on the progress in the development of the 16 remaining sectors
ESCO (2015) SEC 074	15/07/2015	Preliminary quality assurance report for Scientific and technical activities sector
ESCO (2015) SEC 075	27/08/2015	Preliminary quality assurance report for Manufacturing of electrical equipment, computer, electronic and optical

		products
ESCO (2015) SEC 076	27/08/2015	Preliminary quality assurance report Manufacturing of Transport Equipment
ESCO (2015) SEC 077	26/08/2015	Preliminary quality assurance report for Manufacturing of machinery and equipment
ESCO (2015) SEC 078	24/08/2015	Preliminary quality assurance report for Education
ESCO (2015) SEC 079	04/09/2015	Preliminary quality assurance report for the media sector
ESCO (2015) SEC 080	26/08/2015	Preliminary quality assurance report for the sector Business administration
ESCO (2015) SEC 081	03/09/2015	Preliminary quality assurance report for Finance, Insurance and Real Estate
ESCO (2015) SEC 082	01/09/2015	Preliminary quality assurance report for Public administration and defence and membership organisations
ESCO (2015) SEC 083	15/07/2015	Preliminary quality assurance report for Energy and water supply, sewerage and waste management
ESCO (2015) SEC 084	03/09/2015	Preliminary quality assurance report for the Chemical Industry
ESCO (2015) SEC 085	18/08/2015	Preliminary quality assurance report for Personal services, administrative support services and security and investigation activities
ESCO (2015) SEC 086	12/08/2015	Preliminary quality assurance report for fabricated metal products except machinery and equipment
ESCO (2015) SEC 087	15/07/2015	Preliminary quality assurance report for Manufacturing of Consumer goods
ESCO (2015) SEC 088	04/09/2015	Preliminary quality assurance report for the Wood sector
ESCO (2015) SEC 089	27/08/2015	Preliminary quality assurance report for the Construction sector
ESCO (2015) SEC 090	19/08/2015	Preliminary quality assurance report for Healthcare and social services (only sections subject to OC)
n.a.	09/2015	Presentation template: Preliminary Quality Assurance Report
n.a.	17/09/2015	Presentation: Status of the quality assurance process for the 16 sectors - Introduction to the pre-OCP data
ESCO (2016) SEC 002	12/01/2016	Report on the results of the ESCO Online Consultation (Round 1) - Demographics and Key Performance Indicators
ESCO (2016) SEC 006	04/02/2016	Report on the results of the ESCO Online Consultation (Round 1) - Experts' feedback implementation
ESCO (2016) SEC 043	20/06/2016	Report on the results of the ESCO Online Consultation (Round 2)
ESCO (2016) SEC 044	15/06/2016	Report on the gap analysis between ESCO, ISCO and selected national occupational classifications