Brussels, 28 January 2019

Joint EQF Advisory Group, ESCO Member States Working Group
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MSWG 9-5
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ESCO Qualifications Pillar: rationale of the approach, study findings and the way forward

- This note recalls the underlying rationale of the ESCO Qualifications Pillar and focuses on open issues for its further development that have been explored in a recent study.
- Accordingly, it presents the main findings / recommendations of this study and puts forward proposals for follow up.
- The joint ESCO Member States Working Group / EQF Advisory Group meeting is invited to discuss the proposed way forward and signal interest in piloting the suggested next steps

1.   Rationale of the ESCO three-pillar approach

The roots of the current three-pillar architecture of ESCO, namely an Occupations-, a Skills[1]- and a Qualifications Pillar, can be found in the Commission's 2008 'New Skills for New Jobs' initiative to better anticipate, upgrade and match skills needs by building stronger bridges between the world of education and training and the world of work. In its conclusions, the expert group established by the Commission for this initiative pointed to the need for a "common language" able to bridge employment and education and training, and so address the skills matching challenge. One of the proposed key actions in their final report[2] was to: '*develop outcome-based qualifications and a common language between education/training and the world of work, communicate the potential of European Qualifications Framework and national qualification frameworks, and ensure the involvement of all actors, including PES, employers and social partners. Encourage and*

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[1] For the sake of simplicity, in ESCO texts the Skills, Competences and Knowledge Pillar is commonly referred to as the "Skills Pillar".

[2] https://ec.europa.eu/social/BlobServlet?docId=4543&langId=en

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facilitate the use of learning outcomes in planning and delivering educational and training programmes at all levels, including higher education institutions'.

When ESCO was initiated in 2009/10, the purpose was to build this common language as a terminological (skills-based) bridge between education and training and the labour market. Work on ESCO was initiated when the implementation of the EQF was at an initial stage. The interface between the two instruments was therefore discussed from the beginning. These discussions reflected the general agreement that the ESCO Qualification Pillar should be organised around the EQF and (future) national qualifications frameworks and databases. A learning outcomes based approach was seen as an opportunity to improve dialogue between education and training and the labour market (jobs / occupations and CVs). The first ESCO conference in 2010 confirmed a **wide consensus** about this need. The figure below illustrates how ESCO at this early stage was positioned in relation to other relevant instruments (source: Cedefop, 2010):
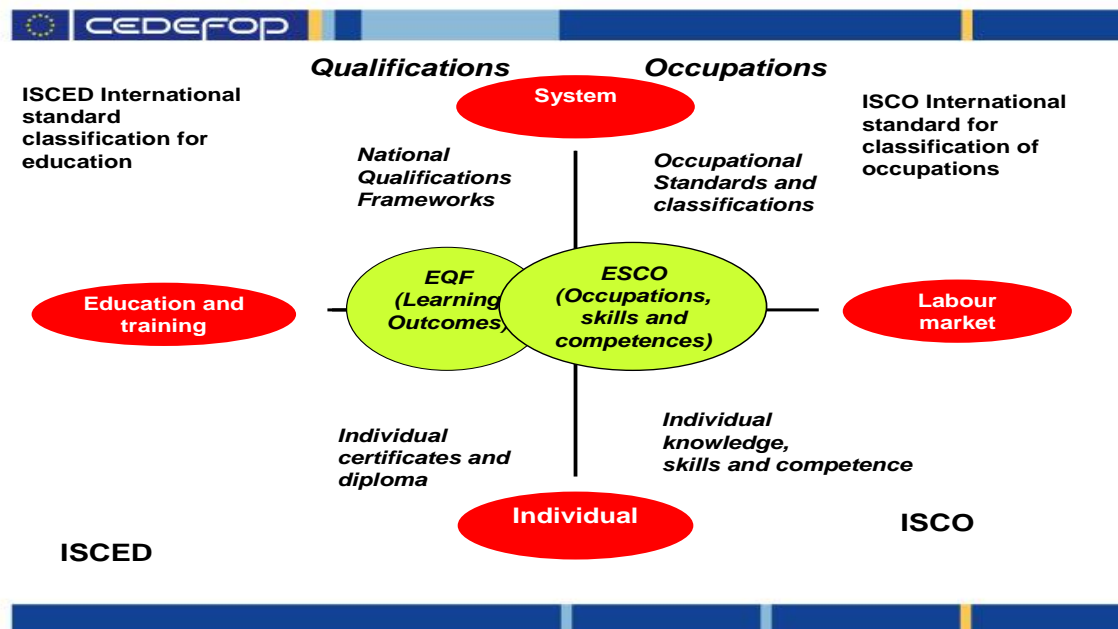
The ESCO Board meeting of February 2011[3] confirmed that a well functioning Qualifications Pillar was necessary for the overall functioning of ESCO. A Business case presented to the ESCO Board[4] underlined the added value[5]:

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[3] https://ec.europa.eu/esco/portal/escopedia/1st_ESCO_Board_meeting
[4] https://ec.europa.eu/esco/portal/escopedia/4th_ESCO_Board_meeting
[5] The added value is further exemplified by linking Europass between ESCO and qualifications. A Europass CV can give additional information on qualifications that can help to present jobseekers qualifications better (see Annex 1 for an example).

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> - *The relationship of qualifications with skills/competences defined in ESCO would allow to directly identify relevant qualifications for missing skills.*
> - *A link with the EQF would make it easier for education/training institutions to accurately describe not only the subject of a full or partial training, but also the corresponding skill/competence level.*
> - *This increases transparency and makes it easier for other actors to understand the information in relation to their national system.*
> - *With the separate pillars on qualifications and on skills/competences, ESCO offers a flexible vocabulary to describe full or partial qualifications. The link to the EQF portal further enhances transparency.*

The ESCO Qualifications Pillar has since been discussed in the context of different ESCO groups (the Maintenance Committee or MAI, the former ESCO Board, the ESCO Member State Working Group) as well as the EQF Advisory Group. The rationale for the three-pillar approach to ESCO has been widely acknowledged, with consensus on the desirability of including a qualifications dimension in ESCO.

In contrast to the ESCO Occupations and Skills Pillars which provide relevant key-terms on occupations and skills, the Qualifications Pillar of ESCO aims to collect and re-publish existing data on qualifications. The final objective of the Qualifications Pillar is to provide a comprehensive listing with high-quality information on the qualifications relevant in Europe, whether awarded by national authorities, private, sectoral or international bodies.

In a fully developed Qualifications Pillar, qualifications displayed in ESCO will come from two different external sources, not owned by the Commission:

1. National qualifications that are part of National Qualifications Frameworks (NQF) that have been referenced to the European Qualifications Framework for lifelong learning ("indirect inclusion").
2. Other qualifications that are directly provided to the Pillar by private, sectoral or international awarding bodies ("direct inclusion"). These are not part of NQF but are relevant for European labour markets. They include private, sectoral and international qualifications and will only be published in ESCO (and will not have an NQF/EQF level).

Moreover, for ESCO to reach its full potential as a bridge between education and training and the labour market, the ESCO skills terminology could be used to systematically identify and analyse which skills are related to a particular qualification. This can help make qualifications more transparent across Europe, and help the translation, comparison and/or review of qualifications. This identification and analysis of the content and profile of a qualification can also be used to indicate matches and/or mismatches with skills needs of occupations and sectors. For ESCO to fulfil this ambition, possibilities should be explored to create links

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between qualifications and ESCO skills in an automated way, using available digital tools. This concerns both the directly and indirectly included qualifications in ESCO.

2. Spotlight on the Qualifications Pillar and open issues

More recent discussions around the ESCO Qualifications Pillar have centered around the following open issues:

1. **Direct inclusion of qualifications** in ESCO (i.e. qualifications that are not included in NQFs), as concerns (1) their quality assurance and (2) the process for inclusion .
2. Concerns that the use of ESCO in the context of education and training may result in a **simplification of learning outcome descriptions**, i.e. a fear that these descriptions will lean too strongly towards labour market requirements and neglect the broader character which qualifications possess, as compared with occupational standards.
3. The need to identify **an adequate procedure to link the Qualifications and Skills Pillars** of ESCO in an automated way.

The practical implementation of the Qualifications Pillar of ESCO has been slower than the development of the Occupations- and Skills Pillars given the priority of developing the ESCO skills and occupations pillars , for the purpose of skills based job matching under the Eures Regulation[6] ;

Early 2018 the Commission initiated an external study to explore ways of addressing the gaps towards a fully functioning Qualifications Pillar. The study aimed to provide well-elaborated options on the main open issues regarding a.) quality assurance of qualifications to be directly included in ESCO and b.) ways of linking the ESCO Skills and Qualifications Pillars.

a.) Quality assurance of private, sectoral and international qualifications for direct inclusion in ESCO

The study was tasked to:

- Map current practice and propose an approach towards quality assuring international sectoral and private qualifications to be directly included in ESCO based on a learning outcomes approach.
- Develop a proof of concept on displaying transparent information on QA of qualifications.

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[6] Commission implementing decision of 18.7.2018 on the adoption and updating of the list of skills, competences and occupations of the European classification for the purpose of automated matching through the EURES common IT platform.

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b.) Learning outcomes and linking the ESCO Skills and Qualifications Pillars

The study was tasked to:

- Clarify how the skills terminology of ESCO can be used as a reference point to increase the transparency of qualifications.
- Scope out the options for linking and propose an approach for linking learning outcomes of qualifications with ESCO skills, covering both indirectly or directly included qualifications in ESCO. Pilot the approach and develop a proof of concept.

3. Main findings of the study

The study was organised around the two topics of quality assurance and linking between the pillars.

(a) Quality assurance of qualifications to be directly included in ESCO

The study reviewed three distinct options for quality assurance ranging from very strict (legal) requirements for the verification of QA to light requirements. Each option has benefits and drawbacks, which accrue differently to the main stakeholders, The 3 options are (1) full accreditation by a national accreditation body, (2) external QA of a qualification (medium), and (3) self-declaration of QA (light):

Option 1: Awarding bodies are required to seek accreditation through the European Accreditation system

Awarding bodies are required to *either* be accredited as 'Certification Bodies for the certification of persons' based on EN ISO/IEC 17024 *or* have their schemes included in the provision of already accredited Certification Bodies.

Option 2: External QA is required but is not validated

Awarding bodies are required to demonstrate that QA of the qualification involves an independent party. A specific version of this approach could involve asking EQF National Coordination Points to confirm that the QA arrangements or labels quoted by an awarding body comply with national systems, standards or regulations. This validation could technically be accommodated by including an electronic signature by the NCP in the application to publish the qualification on ESCO.

Option 3: Self-declaration about QA by awarding body

One or more fields in the ESCO Qualifications Metadata Scheme [7]require awarding bodies to report about QA, but the information is not independently validated. The existence of the

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[7] The qualifications metadata schema serves as 1) data structure for the ESCO qualifications pillar and 2) technical implementation of annex VI of the EQF Recommendation on "Elements for data fields for the electronic publication of information on qualifications with an EQF level".

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awarding body is confirmed through an automated check with the European Business Register. A possible addition to this process is to control through an approval procedure awarding bodies' access to uploading qualifications to ESCO.

In the discussion of the three options, the study referred to the desirability of the ESCO Qualifications Pillar being populated with all qualifications that are of interest for European labour markets. It recommends therefore to explore in more detail the option for self-declaration aided by a 'gateway' for identifying awarding bodies as trusted parties. It suggests that the ESCO QMS should be extended with mandatory fields for international or private awarding bodies to provide information that allows for verification of information on awarding body, qualification, and external quality assurance.

The study also explored the extent to which online technologies and methods can be used as a verification method. The recommended approach to using online technologies for verification would use trusted third parties which register/document the existence and legal status of awarding bodies. A reference to this registration should be included as an Internet link in the formal 'qualification description' ; this link can serve as a resource for verification. In the context of the European co-operation for Accreditation and the accreditation of a certification body by a national accreditation body (NAB) the 'registration' at the NAB is a key point of reference. The European Business Register (EBR) could also be used to carry out cross-checks in some cases although not all MS are part of it[8].

Further recommendations:

- Qualifications displayed in ESCO should be clearly labelled either 'NQF qualification' or 'non-NQF qualification' (an international, sectoral or private qualification can belong to both groups).

- It should be clearly stated that ESCO is not responsible for the quality of qualifications presented in the portal.

In its overall conclusion the study noted that there are important trade-offs between strict requirements for the verification of quality assurance of qualifications, the cost involved, the expected speed in populating the ESCO Qualifications Pillar and the resulting transparency.

(b) Linking the Skills and Qualifications Pillars

Addressing the question of how it is possible, both conceptually and technically, to link the learning outcomes of qualifications included in the ESCO Qualifications Pillar with the ESCO skills pillar, the study concludes that a full 'human' solution is not feasible for all MSs on a short-term cost basis. A highly intensive artificial intelligence solution may be able to provide the best quality outcome, but the technology costs could be considerable, and the development time too long. The study points to the potential for a more pragmatic solution

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[8] Not participating in the European Business Register are the following 11 EU Member States: Belgium, Bulgaria, Croatia, Greece, Hungary, Cyprus, Poland, Portugal, Romania, Slovakia and the United Kingdom.

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making the best use of both technology and human intervention. It recommends the following, complementary, options:

Option 1.1: Automated Linking of Learning Outcomes of Qualifications with ESCO Skills

Human experts conduct the mapping for linking learning outcomes of qualifications in Member State databases with ESCO skills – Member State stakeholder partners do this manually (Recommended for MS which manually adapt databases).

Option 1.2: Support for Enrichment of Member State Qualification Databases Content

Automated linking of the learning outcomes of qualifications with ESCO skills. (Recommended for MS which automatically adapt databases).

Option 1.3: Further ESCO Development and MS Shared Support (with a sub option to further develop ESCO and MS Shared Support).

Support for enrichment of Member State qualification databases content is added. An improvement of the quality of data on qualifications is recommended to facilitate compatibility of Member States' databases to enable automated linkage supporting ESCO linked open data usage.

The study confirmed that automated processes show fewer failures when the quality of the data on qualifications is better.

The study recommends Machine Learning (ML) as the most attractive tool for automated linkage, using processes which identify terms, concepts, concept clusters and topics for matching. An automated approach is proposed based on methods for natural language processing (NLP)[9]. This requires some initial degree of human intervention to identify errors, and the involvement of domain experts is needed.

The recommended approach and options emphasised:

- Member States should encourage awarding bodies contributing qualifications data to manually adapt such data to the ESCO data model, including skills terminology, or to a comparable descriptive framework, or to at least ensure conformity with CEDEFOP guidelines on LO description and the EQF Recommendation so that the potential for automated linking is maximised;

- Member States should be supported to implement automated linking, with ESCO skills terminology enriching their databases for better comparison of qualifications in line with EQF objectives;

- Providers of qualification data should receive additional support and guidance to help them formulate qualification descriptions for maximum comparability;

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[9] Natural language processing is the application of computational techniques to the analysis and synthesis of natural language and speech.

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- Member States and their stakeholder partners should receive COM support for ongoing ESCO activities, such as support to easily access the ESCO skills hierarchy when formulating LOs. The EQF AG should facilitate more operational discussions by including their experts on technical/database issues.

To fulfil the broader objective of comparability of qualifications, learning outcomes descriptions should be improved.

4.   Suggested next steps

The Commission believes that the further development of the ESCO Qualification Pillar is necessary as a means to help bridge the worlds of education, training and the labour market.

For ESCO to be useful as a repository of qualifications with synergies with the ESCO Skills Pillar, it should reflect a broad range of labour market relevant qualifications in Europe. Most qualifications will be included in ESCO through national qualifications databases and registers.

Recent studies by Cedefop point to the changing nature and role of labour market oriented education and training in Europe[10]. Far from moving towards one harmonised or unified model, this important segment of the education and training system is becoming increasingly heterogeneous. This diversification can be seen as a direct response to ageing societies, rapidly changing technologies and occupations in flux, requiring a stronger emphasis on continuing training and tailored skilled developments for adults. This diversification also means that the number and types of qualifications, certificates and credentials issued is rapidly growing.

The Qualifications Pillar of ESCO is ideally placed to support citizens in better orienting themselves in this new reality. While covering qualifications already included in national qualifications frameworks (mainly forming part of initial education and training), the direct inclusion of qualifications and certificates awarded outside national qualifications frameworks, by international and private organisations and bodies, provides citizens with essential information on potentially relevant up- and reskilling possibilities.

Whether indirectly or directly included in ESCO, for qualifications to be accessible, their learning outcomes must be systematically presented, clarifying what a holder is expected to know, be able to do and understand.

The linking of the Skills and Qualification Pillars of ESCO can be seen as an important step towards a more user-friendly system where a citizen can, on the basis of their own skills needs, identify relevant education and training offers and qualifications. The more inclusive

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[10]   http://www.cedefop.europa.eu/en/events-and-projects/projects/changing-nature-and-role-vocational-education-and-training-vet-europe.

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the Qualification Pillar becomes, the more efficiently it will be able to act as a guiding tool for lifelong and life-wide learning.

The linking of the Skills and Qualification Pillars, furthermore, provides an opportunity to strengthen the feedback loop between education and training providers and labour market stakeholders. For qualifications to be relevant to employees and employers there is the need for a continuous process of feedback, ensuring updates and improving quality. By providing a common terminology bridging the learning outcomes descriptions of qualifications and the skills requirements of jobs and occupations, ESCO can support a more systematic dialogue between stakeholders, resulting in qualifications that are more relevant for the labour market.

> Drawing on the study outcomes, and recognising both the need to limit the administrative burden for Member States and the voluntary nature of participation by Member States in ESCO, the European Commission proposes next steps as below.

4.1 Quality assurance of qualifications directly included in ESCO:

All qualifications in ESCO, whether directly or indirectly included, must be trustworthy. For indirectly included qualifications, ESCO relies on the quality assurance applicable to qualifications in NQF contexts. For directly included qualifications, this is not possible, and therefore a separate track of showing their quality reassurance mechanisms is needed.

The proposed approach below attempts to find a balance between strict quality assurance requirements and a broad coverage of labour market relevant qualifications. Transparency as well as trustworthiness are the goals.

This approach therefore proposes to address quality assurance by considering the following principles before the direct inclusion of any qualification in ESCO. These principles follow from the recommendations of the study and reflect both Annex IV (quality assurance principles) and Annex VI (elements for data fields for the electronic publication of information on qualifications) of the EQF Recommendation. They must ensure that only trustworthy qualifications are included in ESCO and that fake qualifications and diploma mills are prevented from entering ESCO:

1. All awarding bodies will have to prove **evidence of their existence** through either a legal proof of existence or by being part of a register. A Unique Resource Identifier (URI) could be used which can be checked as 'existing'. ESCO would need to include a list of accepted registers at European and national levels.

2. In line with the EQF definition of a qualification, all qualifications directly included in ESCO should be "a formal outcome of an assessment and validation process which is obtained when a competent authority determines that an individual has achieved learning outcomes to given standards". **Transparency of learning outcomes** is a crucial element of information for the learner and for the understanding of qualifications in applications received by employers.

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3. As directly included qualifications in ESCO should have labour market relevance, there should be proof of an existing structured process for **renewal and update** of the qualification.

4. Awarding bodies must be **transparent on the internal and external quality assurance** of their qualifications. They must refer to a URL where the information on quality assurance is available.

5. If applicable, awarding bodies should give proof of relevant sectoral, national or international **certification**.

6. If relevant, awarding bodies should be **accredited** as a 'Certification Body for the certification of persons' based on EN ISO/IEC 17024, or have their schemes included in the provision of already accredited Certification Bodies under the European Accreditation scheme.

Elements 1-4 should be minimum requirements for qualifications directly included in ESCO. If additional information under points 5 and 6 can be provided, this should be welcomed, but this should not be obligatory, as it may lead to exclusion of relevant qualifications, reducing the overall relevance of the ESCO Qualifications Pillar as a repository for qualifications not included in European NQFs.

This approach aims to create maximum transparency on quality assurance for users. The information published on ESCO remains the responsibility of the awarding body or competent authority in question.

The Commission will verify information before it is published on ESCO. In the case of suspect applications, contacts will be sought with competent national authorities (e.g. EQF-NCPs or ENIC-NARIC centres). In case of unresolved concerns, no publication on ESCO will take place.

Practical implementation

To be able to upload data qualifications in ESCO, awarding bodies or competent authorities must go through two different stages:

1. Awarding bodies or competent authorities should prove their existence in order to become a trusted party under ESCO. For this, the unique resource identifier is used which ensures linkage to an online statement of verification in a manner that is entirely consistent with the ESCO 'linked open data'. The Commission will explore to which extent the European Business Register can be used for this purpose.

2. Once having obtained the status as a trusted party, awarding bodies or competent authorities receive a login code to upload their data

Before publication, the Commission will carry out a conformity check of uploaded data with the ESCO QMS.

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Role of the Commission as administrator of ESCO:

- The QMS should be updated to provide different quality assurance sub-options in the data field for external quality assurance.

- If the option of involvement of EQF-NCPs or other competent national authorities is chosen, another additional field under external quality assurance should be created in QMS.

The very large majority of qualifications in ESCO will have an EQF level. It should be clear to users whether a qualification has an EQF level or not.

Piloting

Piloting of the QMS for qualifications for direct inclusion took place in 2016-17 with qualifications from a few multinational companies. The results of testing were positive, as the qualification data were able to meet the requirements of the ESCO QMS.

For testing of a revised QMS that includes the different quality assurance options above, an open approach could be envisaged through a call for expression of interest on the ESCO portal addressed to bodies awarding qualifications (e.g. private, sectoral or international) that are not included in national qualifications frameworks or systems and that have relevance for European labour markets.

These qualifications could then "apply" for direct inclusion in ESCO through the QMS. Qualifications that meet all criteria could be put on a list. After a positive assessment, as endorsed by the EQF AG and the ESCO MSWG, these qualifications could then go live. Once done, the application procedure for direct inclusion of qualifications in ESCO could be launched to a wider range of stakeholders.

Timetable

In case of endorsement of the proposed pilot approach to quality assurance of qualifications directly included in ESCO, the following timetable is suggested:

15 March 2019	Launch of open call for testing on the ESCO and LOQ Portals
April – September 2019	Testing period
October 2019	Report on the results of testing
November/December 2019	Discussion of the testing results in the EQF AG – ESCO MSWG
As from January 2020	Possible launch of the direct inclusion of qualifications in ESCO

The EQF AG and the ESCO MS WG will be informed of progress during their 2019 meetings.

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4.2 Linking the Skills Pillar and the Qualifications Pillar of ESCO

As a classification of skills, ESCO has a great potential to enrich information on qualifications, by allowing to link learning outcomes of qualifications to ESCO skills. Linking this information means that employers can more easily grasp the labour market value of a qualification, in particular in a cross border context. Individuals may see their chances on the labour market improved through better matching based on richer qualifications information.

Further to the outcomes of the study, the Commission intends to test the use of an automated approach based on methods for natural language processing with an initial degree of human intervention. Tests should take place at the source level of qualification data, i.e. in national qualifications databases. The qualification owners should remain the holders of the enriched content and keep full control.

The purpose of testing should be:

- Pilot automated linking on the basis of natural language processing for a limited number of diverse qualifications within national databases.

- Testing should give insight in the extent and nature for the need of human intervention to correct errors from natural language processing.

- Testing should take place in two stages in order to observe to what extent and how machine learning has positive effects on the testing results.

- Explore the use of the existing ESCO mapping platform to map learning outcomes to ESCO skills.

- To test if it is possible to link learning outcomes with ESCO skills in other languages than English.

The qualifications proposed for testing should ideally be the same across the countries involved in the testing. This allows an additional testing of the quality of both the ESCO skills and the quality of data on learning outcomes of qualifications.

Member States and other countries participating in the EQF AG and ESCO Member State Working Group are invited to express their interest in piloting. The Commission will provide full technical support to the testing.

Follow up to testing

If the testing generates a positive result, the Commission could adapt ESCO to show the links between learning outcomes of qualifications and ESCO skills. This should make it possible for countries interested to link learning outcomes of qualifications with ESCO skills in their national qualifications database/register if it has been mapped to ESCO.

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The Qualifications Metadata Scheme currently in use and the Qualifications Metadata Register (QDR) used for uploading qualifications data already ensure that changes at national level (e.g. additional qualifications having been mapped to ESCO skills) become automatically visible and usable at European level.

Further to the study's recommendations, after testing, the following options for linking could be considered:

- Manual linking of learning outcomes of qualifications with ESCO skills – where Member State databases provide no automatic mapping possibilities.
- Automated linking of learning outcomes of qualifications with ESCO skills - through Natural Language Processing techniques (topic-matching) - to then be validated and corrected for errors by relevant human experts. Automated mapping should be further supported by machine learning with human supervision, leading to higher quality automated mapping in the medium-term.

The study has recommended that qualification data, and their learning outcomes descriptions in particular, need to become more comparable. This touches on the question of guidelines on writing learning outcomes and the usefulness of a common format for learning outcomes[11].

Based on the voluntary character of ESCO, linking learning outcomes of qualifications and ESCO skills is voluntary. Further to the recommendations in the study, the Commission will explore how it can support interested countries in building the capacity to carry out the mapping of learning outcomes to skills. Specific possibilities for support, for example workshops or appropriate technical support tools, will be discussed with the EQF AG and the ESCO MSWG.

Timetable

In case of endorsement of the approach outlined in this note, the following timetable for the testing and further development of the links between the Qualifications and Skills Pillars of ESCO is proposed:

15 March 2019	Deadline for expression of interest in piloting the mapping of learning outcomes to ESCO skills
April – September 2019	Testing period
October 2019	Report on the results of testing
November/December 2019	Discussion of the testing results in the EQF AG – ESCO MSWG
As from January 2020	Possible launch of the further development of ESCO to allow mapping of learning outcomes to ESCO skills

The EQF AG and the ESCO MSWG will be informed about progress during their 2019 meetings.

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[11] Cedefop (2017). Defining, writing and applying learning outcomes: a European handbook. Luxembourg: Publications Office. http://dx.doi.org/10.2801/566770

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Annex 1: Example of Natural Language Processing based on ESCO of a Europass sample CV:

**Europass
Curriculum Vitae**

Personal information

First name(s) / Surname(s) | **Walshe, Edmond**

**Desired employment /
Occupational field** | **Electrician**

Occupation: Electrician

Work experience

Dates | September 1996-2005

Occupation or position held | Electrician

Occupation: Electrician

Main activities and responsibilities | Senior Electrician Technician of a ten person team

Occupation: Electrician

Name and address of employer | Walshe Electrical Ltd, Dublin 6

Education and training

Dates | 1995-1997

Title of qualification awarded | National Craft Certificate

Qualification: Advanced Certificate, Electrical

Principal subjects/occupational skills covered | Electrical installation and maintenance

Skill/Competence: Electrical installation

Name and type of organisation providing education and training | FÁS, Middle Abbey Street, Dublin 1

Skill/Competence: Electrical maintenance

Level in national or international classification | Level 6 on Irish National Framework of Qualifications

Personal skills and competences

Social skills and competences | I have worked in various types of team projects from rewiring newly built estates to electrical maintenance of various corporate businesses.

Skill/Competence: Working in teams
Skill/Competence: Electrical maintenance

Organisational skills and competences | I am a senior electrician which also involves organising teams to carry out various work projects.

Occupation: Electrician
Skill/Competence: Managing teams

Technical skills and competences | Knowledge of ETCI regulations governing temporary installations.

Skill/Competence: Rules for electrical installations

Other skills and competences | Certificate in Project Management Certificate in First Aid

Qualification: Project manager, certified
Qualification: First Aid Certificate

Driving licence | I am a holder of an Irish drivers licence. Category B vehicle.

Qualification: Driving license, class B

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