The pilot project on the horizontal comparison of levelled qualifications

Draft of the final report for discussion at the AG38 meeting
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## Contents

Summary of project objectives and results ...................................................... 4

1. Purpose of the horizontal comparison of the levelled qualifications pilot project. ............................................................................................................. 6

   1.1. Main objectives of the HC pilot project as expressed in the AG32 note. 6

   1.2. Horizontal comparison exercise as an example of the soft coordination approach 7

2. Target group of the horizontal comparison pilot project ................................. 9

3. Agenda of the HC team’s work ................................................................ 10

4. Methodology ....................................................................................... 12

   4.1. Introduction to the method: “comparability of qualifications“ .................. 12

   4.2. Operational methodology ................................................................. 14

5. Horizontal comparison of two selected qualifications .................................. 16

   5.1. Context information analysis .............................................................. 16

   5.2. Learning outcomes analysis ............................................................... 22

   5.3. Comparison of the methods of levelling: .............................................. 28

6. Actual qualifications as an illustration of the aforementioned comparisons ... 34

7. General conclusions and lessons learned .................................................. 37

   7.1. General conclusions of the project ....................................................... 37

   7.2. Lessons learned .............................................................................. 38

8. Recommendations ................................................................................ 40

   8.1. General recommendations: ............................................................... 40

   8.2. The draft short roadmap for further work on the horizontal comparison for 2017-18 – main elements and their agenda: 40

   8.3. PLA on the horizontal comparison (May 2017) organised by Poland and making use of the HC pilot project. First assumptions: 40

9. Appendix: ............................................................................................ 41
Summary of project objectives and results

The AG 34 note sets the main purpose of the pilot exercise, which is to develop a common methodology for a horizontal comparison tool for levelled qualifications across countries. In general - to ensure and improve the way national qualifications are referenced to the EQF for achieving and supporting better transparency of qualifications systems and trust within and among countries. This should be supported and justified by empirical data and analyses provided by the project. In particular, the project aims to deliver a methodology for horizontal comparisons, including a “technical comparison fiche”.

The participation in the exercise was voluntary. The comparison of levelled qualifications was not treated as a tool for controlling submitted reports but to prepare effective tools for the comparison of the data provided by common work, the sharing of experiences, and a better understanding of the national approaches to methods of qualifications levelling.

Based on the project analyses, the following statements can be formulated as the main project results:

- The technical fiche prepared in the project framework is an effective tool for the horizontal comparison of levelled qualifications.

- The comparability of levelled qualifications cannot be understood as a simple match of sets of qualifications' learning outcomes – other elements of national qualifications systems and methods of levelling should be considered. They are represented in the proposed fiche as “context information”.

- The comparability does not demand the strict standardisation of qualifications descriptions across countries. Nevertheless, for mutual understanding and trust, some core information should be provided. This is represented by the fiche sections and by additional questions developed in the project.

- The language for the description of qualifications developed by countries on the basis of the EQF Recommendation of 2008 and the referencing processes is sufficient to present and compare qualifications.

- Comparability does not require identical national methods of levelling. Nevertheless, to safeguard the “best fit” method, two core elements should be present in any national method of levelling:
  - the learning outcomes of a qualification should be referred to the level descriptors,
  - their mutual reference is evaluated / confirmed by the quality assurance systems.

- The criteria of referencing adopted by the Advisory Group are a sufficient tool for referencing and comparing levelled qualifications.
The outcomes of the pilot exercise indicate that the assumption of the EQF 2008 Recommendation on the comparability of qualifications using the EQF and NQFs’ level descriptors to set the levels of qualifications is met and that national practices in levelling can be trusted.
1. Purpose of the horizontal comparison of the levelled qualifications pilot project.

1.1. Main objectives of the HC pilot project as expressed in the AG32 note.

The main purpose of the exercise was drafted in Note AG32-3 as “A methodology and a work programme for a pilot on the horizontal comparison of levelled qualifications”, adopted by the EQF Advisory Group at the meeting of 5–6 October 2015 and then revised to the final version in November 2015. In the note, we can read:

- The general aim of the pilot is to further improve the way NQF/EQF levelling takes place, building on national experiences,

- The specific aim of the pilot is to fine-tune and test a methodology for the comparison of levelling decisions and sharing experiences on existing strengths and weaknesses,

- The results will inform and support future levelling decisions at the national level, and remain the property of these countries,

- The experiences from the pilot will inform and orient future “horizontal comparisons”,

- “Horizontal comparisons” will address the consistency of the referencing of national qualifications, seeking (for example) to clarify:
  - whether seemingly comparable qualifications assigned to the same level are indeed comparable, and
  - why seemingly similar qualifications have been assigned to different levels in different countries.

- “Horizontal comparison” also provides information on the level of detail and way of describing learning outcomes across different countries.

Taking these objectives under consideration, the HC working team formulated the main goals of its work as follows:

- to develop a common methodology – the horizontal comparison tool for levelled qualifications across countries,

- to address the consistency of the linking of national qualifications, seeking how to:
  - improve the way NQF levelling takes place,
  - understand and explain if seemingly comparable qualifications assigned to the same level are indeed comparable,
Purpose of the horizontal comparison of the levelled qualifications pilot project.

» understand and explain why seemingly similar qualifications have been assigned to different levels in different countries,

» deliver a methodology for horizontal comparisons, including a “technical comparison fiche”.

- In general: to ensure/improve the way national qualifications are linked to the NQF for achieving and supporting better transparency and trust within and between countries.

In developing the aims of its work, the HC pilot team referred to the main characteristics of the EQF purpose as presented in the EP Recommendation of 23 April 2008 as its general background, as follows:

- The EQF is a common European reference framework which links countries’ qualifications systems together, acting as a translation device to make qualifications more readable and understandable across different countries and systems in Europe. It has two principal aims: to promote citizens’ mobility between countries and to facilitate their lifelong learning.

- The Recommendation will establish a common European reference which will link the various national qualifications systems together and so facilitate greater communication between them.

- The objective of this Recommendation is to create a common reference framework which should serve as a translation device between different qualifications systems and their levels, whether for general and higher education or for vocational education and training. This will improve the transparency, comparability and portability of citizens’ qualifications issued in accordance with the practice in the different Member States. Each level of qualification should, in principle, be attainable by way of a variety of educational and career paths.

The most important recommendation for the pilot project work taken from this document was the protection of the variety and diversity of education and qualifications systems against any form of unifying and standardisation and achieving this aim by better comparability, transparency and mutual understanding across countries.

1.2. Horizontal comparison exercise as an example of the soft coordination approach

Education and lifelong learning policy, including the development of national qualifications frameworks is a domain of member states’ policies and regulations. In such cases, policy coordination at the European level takes the form of an open method of coordination.

The open method of coordination (OMC) in the European Union is usually described as a form of “soft” law. It is a form of intergovernmental policy-making that does not result in binding EU legislative measures. The OMC takes place in
The OMC was originally created in the 1990s as part of employment policy. It was an instrument that was developed particularly during the implementation of the Lisbon Strategy. Application of this method was particularly useful, as this was a time when EU integration and expansion was advancing quickly.

The OMC has provided a framework for cooperation between the EU countries, whose national policies can thus be directed towards certain common objectives. Under this intergovernmental method, the EU countries are evaluated by one another (peer pressure), with the Commission’s role being limited to surveillance.

The OMC is principally based on:

- jointly identifying and defining objectives to be achieved (adopted by the Council),
- jointly established measuring instruments (statistics, indicators, guidelines),
- benchmarking, i.e. comparison of EU countries’ performance and the exchange of best practices (monitored by the Commission).

The work on horizontal comparisons is in line with the principal assumptions of the open method of coordination. It leads to the joint identification of the principles and approach for the comparability of qualifications in countries that have referenced their national qualifications frameworks to the EQF (or are in the process of doing so). It also leads to developing the guidelines of such comparisons in the future. Additionally, it is an exercise that helps to develop an approach for benchmarking national qualifications.

Again, the above purposes expressed by both documents: the EP Recommendation of 2008 and the AG32 note, as well as the soft coordination approach were the background and directives for the HC working team. The entire work of the project was focused on searching for tools to confirm and strengthen transparency and the referencing of national qualifications systems by confirming the comparability of levelled qualifications. And by these means to support the mutual trust of countries and stakeholders participating in the project.
The report from the pilot exercise is primarily presented to the EQF Advisory Group. Further distribution of this report and findings from the pilot project should be carried out by the EQF AG for broader consultation leading to the adoption of the proposed methodology for broader application.

The HC team proposes to disseminate and consult the results with the following stakeholders:

- Cedefop
- ESCO, Europass, EQAVET networks
- Social partners: Business Europe, UEAPME
- Network of national correspondents for the HEQF (EC)
- NCPs network
- ETF
- UNESCO
- Students associations (ESU)
- Institutions for national registration of qualifications
- Other EU and national bodies
3. Agenda of the HC team’s work

The HC project working team consisted of representatives of seven¹ countries and stakeholders – members of the AG – who voluntarily joined the exercise to achieve the aims introduced by the AG32 Note. The main dates of the team’s work are as follows

- February 2016 – initial meeting: indication of the project leader (Poland), initial discussion on the fiche, preliminary discussion on the choice of qualifications, adopting a further work agenda,

- March– May 2016 – final decision concerning the qualifications (CNC operator and mechanical engineer), accepting the first version of the fiche, the first round of data collection and provisional comparative analysis,

- 3 June 2016 – first presentation of the HC project work and findings at the PLA in Belfast.

- 14 June 2016 – first consultation meeting in Brussels. The results: adopting “additional questions” for the fiche, accepting “actual qualification” cases, decision about one-day consultation meeting in Warsaw,

- 15 June 2016 – first presentation of the methods and findings of the HC working team at the AG36 forum,

- July – August 2016 – collecting “the second wave” of data based on additional questions, developed comparative analysis of methods of levelling,

- 9 September – second consultation meeting in Warsaw: overview of work done – challenges and problems to be solved, structure of the final report, adding new HC project members (Scotland),

- September – October 2016 – elaborating new tables for the comparisons of qualifications and first complete drafts of the similarities and differences for the CNC operator and mechanical engineer qualifications across countries. Discussion on the concept of “comparability” of qualifications.

- 10 October – third consultation meeting in Brussels. Topics for discussion: levelling principles – the necessary elements creating the “hard core” of levelling. Decision on the main results of the project: based on the data collected for CNC operator and mechanical engineer qualifications, it is possible to compare the levelled qualifications using the adopted fiche and the best-fit method.

- 04 October – second presentation of the methods and findings of the HC working team at the AG37 forum.

¹ Since Scotland join the project and sent the data at the end of November, they will be included in the analysis in the final version of the report in January 2017.
- 14 November 2016 – fourth consultation meeting in Warsaw – discussion on the first draft of the final report.

- 8 December – presentation of the second version of the report at the AG forum.

Planned further events include:

- 13 January 2017 – consultation meeting in Warsaw

- 7 (?) February 2017 – presentation of the final version of the report at the AG39 forum

- Spring (May?) 2017 – PLA on the horizontal comparison in Warsaw

For more detailed information – see Appendix 9.1
4. Methodology

4.1. Introduction to the method: “comparability of qualifications”

The first wave of data gathering of both chosen qualifications raised the question of what the team understands by the term “comparability” of qualifications. In other words – what does it mean to compare qualifications? On one hand, the definition of “comparability” is crucial for the horizontal comparison and establishing the basis for the comparative analysis. On the other hand, the concept of comparability was developed on the basis of gathered data – it was the result of looking for the core essential elements of the qualification descriptions provided by countries.

After receiving the second wave of more specific data provided at the request of answering additional questions that interpreted the fiche points and discussions at the consultative meeting, the team adopted the characteristics of comparability, consisting of the following statements:

- “Comparable qualifications” does not mean “identical qualifications”: operating with the same set of learning outcomes, written in the identical language, using the identical methodology of levelling, possessing an identical context. In cases where we have identical qualifications, the comparison is not needed. The comparison is needed when the qualifications are not identical.

- The set of information provided by the fiche adopted in the project is sufficient for comparing qualifications.

- Sets of LOs of the compared qualifications have to be comparable but not identical. To compare LOs means:
  - Looking for identical LOs – selection of the same or almost the same LOs
  - Looking for substantial similarities – selection of similar LOs
  - Looking for substantial differences – selection of different LOs
  - Evaluating the scope and character of similar and different LOs, the importance of information included in the data for the essential (“hard core”) characteristics of qualifications
  - Comparing the language used to describe the LOs.

- Comparing qualifications also means considering:
  - Comparison (if relevant) of the volume of qualifications/period of learning
  - Comparison of levelling methods used
» Indicating the acceptable limits of differences between the LOs

» Explanation of the differences, considering the levelling method and context information

» Explanation of the differences, considering the description of the “actual qualification”

» Analysis of quality assurance evidence relevant to the compared qualifications

» Whether or not we can confirm that the qualifications are / are not comparable

» Submission of evidence providing the rationale for this conclusion.

Such characteristics were accepted by the team as the “best fit” method for a general comparison of levelled qualifications in reference to the AG’s objectives. It is clear that such a multidimensional evaluation of comparability cannot be done in a “mechanical” way – it needs a well-prepared evaluator, possessing knowledge about EQF/NQF relationships, skills in the methodology of comparative analysis and competences concerning respect for the diversity of national qualifications systems and the autonomy of countries implementing NQFs.
4.2. Operational methodology

The basis for the comparison of the two chosen qualifications was the fiche developed by the Polish team and consulted with all HC project partners. The starting point for the final version of the fiche was its draft version developed by Cedefop and annexed to Note AG32-3 of November 2015.

Table 1. The fiche for horizontal comparisons

<table>
<thead>
<tr>
<th>Country:</th>
<th>Country A</th>
<th>Country B</th>
<th>Country …</th>
<th>Results of the horizontal comparison of qualifications and their levelling – similarities and differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group members:</td>
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<tr>
<td>Title of qualification (bilingual)¹</td>
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</tr>
<tr>
<td>Scope of qualification²</td>
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<tr>
<td>Context information³</td>
<td></td>
<td></td>
<td></td>
<td>• Access rights;</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>• Purpose of the qualification in education;</td>
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<td></td>
<td>• Purpose of the qualification at the labour market;</td>
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<td></td>
<td></td>
<td>• Reference to occupational context;</td>
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<td></td>
<td></td>
<td>• International standards;</td>
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<tr>
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<td></td>
<td></td>
<td>• Recognition Certification practice⁴;</td>
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<td></td>
<td>• Validation practices;</td>
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<td>• Validation of informal and non-formal learning;</td>
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<td></td>
<td>• Quality assurance;</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>• Other relevant.</td>
</tr>
<tr>
<td>Organization of learning outcomes⁴</td>
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<tr>
<td>Learning outcomes⁵:</td>
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<tr>
<td>Analysis of learning outcomes⁶:</td>
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<tr>
<td>Basis of levelling⁷</td>
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<tr>
<td>Level of NQF/EQF⁸</td>
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<tr>
<td>Conclusions of the qualification horizontal comparison between countries</td>
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<tr>
<td>Recommendations (overall, per country, to EQF AG)</td>
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</tbody>
</table>
The participating countries provided data on the (1) CNC operator and (2) mechanical engineer qualifications according to the instructions by submitting:

- **Context information** (in 2 stages – see Chapter 5)

- **Data concerning the learning outcomes**

- **Methodology of levelling**

Since the first wave of data on the context information resulted in very different answers making the comparison difficult, the team adopted a set of additional questions to make the answers more compatible. The second wave of data had a better order to the questions, making the fiche a more effective tool for comparison.

For more detailed information on the methodology – see Chapter 5.

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3 Titles of qualifications may slightly differ among different countries.

4 Scope of qualification is a short description of a qualification. It specifies, if qualification attests that the person is qualified to practice an occupation or perform a particular set of activities.

Context information are all the information that may help to understand the learning outcomes and affect the levelling. That involves following issues:

- **Access rights.** Who is eligible to apply for qualification? What are the prerequisites? What are other requirements for applicants (formal, financial etc.)?

- **Purpose of the qualification in education.** Determines if the qualification provides the access to further education and training or to higher education. What are progression routes? What is the next level? What are possible routes of progression for a learner? What are the requirements to progress?

- **Purpose of the qualification at the labour market.** Determines if the qualification is required/one of requirements/recommended to practice a certain profession.

- **Reference to occupational context.** Is the qualification related to any specific sector or branches? Institutions or companies? Functions or positions? Working culture? Specific geographical region? In which way?

- **International standards.** Is the qualification referring to any international standards (e.g. sectoral)? Which ones?

- **Recognition practices.** Who is responsible for a recognition? What are recognition practices/procedures?

- **Validation practices.** Who is responsible for a validation of the qualification? What are the validation practices/procedures?

- **Validation of informal and non-formal learning.** Is it possible to validate prior achievements? How does a learner validate her achievements?

- **Quality assurance.** What are the quality assurance practices? Who is responsible for quality assurance?

- **Other relevant.**

5 It was suggested to change the name of category ‘Recognition practices’ into ‘Certification practices’. The term ‘recognition’ is misleading, so the change lead to more comprehensive answers. The term “recognition” in many countries (including Poland) means a formal recognition by a competent body of the validity of a qualification attained abroad in order to continue education or for labour market purposes in one’s home country.

However, the main purpose of this category was to present a process resulting in the issuance by a competent body of a document certifying that a learner has achieved a defined set of learning outcomes.

6 Information on how the learning outcomes are presented, if they are grouped into units or presented separately etc.

7 List of learning outcomes, according to the method described above.

8 Analysis of the learning outcomes in order to determine the level of qualification. Each learning outcome has to be compared with a level descriptors in a given NQF. The adequate (“best fit”) descriptor has to be unequivocally indicated. The example of analysis: learning outcomes of qualification “Organization of production the glassware” compared with level descriptors of Polish NQF.

Conclusion: since all three learning outcomes have level 4, the whole qualifications also would have level 4.

9 Basis of levelling. The description of a method that is used in a given country to determine the level of qualification.

10 Level of NQF determined according to procedures described in former points. Adequate level of EQF according to country’s referencing report.
5. Horizontal comparison of two selected qualifications

In the pilot exercise, two selected qualifications, CNC machine operator (level 4) and Mechanical engineer (level 6), were subjected to a detailed horizontal comparison that included analyses of context information, learning outcomes and a comparison of the methods of levelling used. The outcome of the comparison is presented in the sections below.

5.1. Context information analysis

The analysis conducted of the context information for the two chosen qualifications showed that despite the differences between these qualifications resulting from the specificity of national qualifications systems in the countries participating in the project, the context information of the analysed qualifications can be compared and the result of this comparison indicates that they are similar.

During the HC meetings, team members agreed that context information is an important and necessary element of the HC methodology. The additional questions and clarifications of each category were considered to be particularly useful for the descriptions of qualifications.

Team members also expressed the opinion that the context information is especially helpful when qualification levelling procedure does not seem clear or understandable. Detailed information about the functioning of qualifications in national qualifications systems allows us to understand the levelling decision resulting from the national solutions.

Evidence for these statements are illustrated by the results of the analyses presented in the following sections.

5.1.1. Submission of context information

The submission of context information by HC project partners was divided into three stages:

(1) Submission of „hard core“ context information

(2) Submission of other context information

(3) Additional questions as guidance for the descriptions

(1) Submission of „hard core“ context information

In the first phase of the context information analysis, it was decided to start the comparative analysis in reference to five categories making up the core elements (hard core) of context information: (access rights, purpose of the qualification in the labour market, recognition practice, validation practices, quality assurance). The analysis of the
Horizontal comparison of two selected qualifications descriptions submitted by all partner countries in reference to these five categories consisted of two parts:

1) assessment of whether the submitted descriptions fulfil all the categories and whether the information provided in each category is complete (Yes/No/Partly),

2) comparison between countries of the descriptions for each category.

The analysis of the five categories of context information was presented in two excel files consisting of two sheets (Appendixes 9.4 and 9.5). The first one presents an overview of the submitted descriptions with regard to its completeness. The second one presents citations of the submitted descriptions relating to the given categories with additional comments.

The following table presents comments about some specific aspects referring to the given categories:

**Table 2. Specific aspects of the given categories of the fiche**

| Access rights (Who is eligible to apply for the qualification? What are the prerequisites? What other requirements must applicants fulfil (formal, financial, etc.?)?) | This category seems to be precisely formulated. |
| Purpose of the qualification in the labour market (Determines if the qualification is required / one of the requirements / recommended to practice a certain profession.) | This category seems to be most ambiguous; the title of the qualification determines the profession for which the qualification is needed (CNC machine operator); in this case the description of this category is inadequate in reference to its title; some countries understood this category as a reference to the description of labour market needs; this is probably the most appropriate understanding of this category. |
| Recognition practice (Who is responsible for recognition? What are the recognition practices / procedures?) | In these three categories, it is most evident that the descriptions refer to the general procedures and rules of recognition, validation and QA established in different countries for vocational qualifications (descriptions of CNC machine operator) and for HE (descriptions of mechanical engineer). Particularly in the case of the HE qualification, the general description of validation practices and QA is justified. In all countries represented by project partners, validation and QA are within the competence of the institution (faculty). |
| Validation practices (Who is responsible for the validation of the qualification? What are the validation practices/procedures?) | However, it seems that for the purposes of this exercise, a description with a closer reference to the analysed qualifications would be expected. It was assumed that the detailed description has to serve as an auxiliary tool to the LOs analysis in determining the specificity and the essence of a particular qualification and thus assessing whether it is identical to the qualifications occurring in other countries under the same name. The initial analysis of the submitted descriptions confirmed the need to illustrate and supplement the analysed qualification by describing an actual qualification provided by a specific institution (e.g. the mechanical engineering program offered by the Warsaw University of Technology, with a set of learning outcomes, the method of their validation, the contents of the modules and the way they are provided, etc.). |
| Quality assurance (What are the quality assurance practices? Who is responsible for quality assurance?) | |

The analysis of the five categories of context information was presented in two excel files consisting of two sheets (Appendixes 9.4 and 9.5). The first one presents an overview of the submitted descriptions with regard to its completeness. The second one presents citations of the submitted descriptions relating to the given categories with additional comments.
(2) Submission of other context information

The second stage was the submission of the rest of the context information.

(3) Additional questions leading to refined descriptions

The third step was formulating **additional questions** for each of the categories. After the analysing the submitted descriptions, it was noticed that additional clarification is needed on which information in each category is relevant and expected. The explanation of the categories included in the footnotes of the fiche is very limited and seemed to be unclear. Therefore, it was decided to formulate additional questions and explanations for all categories in order to receiving clearer and more detailed information.

<table>
<thead>
<tr>
<th>Table 3. Example of additional questions and explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category: Purpose of the qualification in the labour market</strong></td>
</tr>
<tr>
<td><strong>Explanation of the categories included in the footnotes to the fiche</strong></td>
</tr>
<tr>
<td>Determines if the qualification is required / one of the requirements / recommended to practice a certain profession</td>
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</tbody>
</table>
| Example: | "A person with this qualification can be employed by clubs, associations and sports federations, among others, to coach national and provincial teams, as well as players predisposed to achieving high performance in sports teams of the highest class divisions. He/she can also work with regional sports associations in the field of the education and training of coaching staff."
| The qualification can be used for: | • Gaining employment in service and repair shops and stations, the servicing and sales of motorcycles, |
| | • Operating a business in the provision of services related to the diagnosis, repair and maintenance of motorcycles, |
| | • Hobby activities involving the servicing and repair of one’s own motorcycle. |
The summary of the submitted information related to the context information after it was clarified was included in the “context summary” document (Appendix 9.6).

After completion of this stage of the analysis, the following conclusions were formulated:

- Additional questions lead to receiving clearer and more detailed information; these questions should be included in the final version of the fiche as a supplementary explanation of the categories.

- The suggested change of category name from “Recognition practices” to “Certification practices” seems to be justified. The term “recognition” is misleading, and the change results in more comprehensive answers. The term “recognition” in many countries (including Poland) means the formal recognition by a competent body of the validity of a qualification attained abroad in order to continue education or for labour market purposes in one’s home country. However, the main purpose of this category, is to present the process resulting in the issuance by a competent body of a document certifying that a learner has achieved a defined set of learning outcomes.

- The modification of the fiche is to be discussed: it can be limited to the categories that are necessary to perform a horizontal comparison.

- The language and terminology used in the descriptions are similar. This means that they are in accordance with the terminology of the EQF and Bologna Process. A clear difference between the descriptions is in their length and structure. The length of answers should be limited.

5.1.2. The comparative analysis of the context information

The final step of the work on context information was summarizing and performing a comparative analysis of all the descriptions of each category submitted by the project partners (Appendixes 9.4 and 9.5).

The following tables present the results of the analysis as well as the similarities and main differences of the solutions presented in the submitted descriptions.
### Table 4: Comparative analysis of the context information: CNC machine operator

<table>
<thead>
<tr>
<th>Context information</th>
<th>Similarities of the solutions</th>
<th>Main differences</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level of qualification</strong></td>
<td>3 or 4</td>
<td>3: IT, PL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4: LV, NO (4A), SE, HU</td>
</tr>
<tr>
<td><strong>Access rights</strong></td>
<td>In all cases, the basis to access is completion of a 9-year basic compulsory education programme (primary school and lower secondary school)</td>
<td>Specific requirements in some countries:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• beginning upper secondary school [SE],</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• obtaining professional pre-qualification [PL, HU]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• having job experience in the field [PL]</td>
</tr>
<tr>
<td><strong>Purpose of the qualification in the labour market</strong></td>
<td>In all cases, the CNC machine operator works in metal working and mechanical engineering industry enterprises.</td>
<td>None</td>
</tr>
<tr>
<td><strong>Recognition practice (certification)</strong></td>
<td>In almost all cases (PL, HU, SE, NO, LV), certification of this qualification is carried out by a vocational education institution (school, provider) that is accredited by the Ministry or other institution at the central level (e.g. Skärteknikcentrum in NO).</td>
<td>In Italy, the recognition of this qualification is the responsibility of the Regions</td>
</tr>
<tr>
<td><strong>Validation practices</strong></td>
<td>In all cases, the validation process is part of education programmes, which are accredited at the national or regional level. Even though the process of validation is often carried out at the same place as the training, the exams are conducted by independent commissions.</td>
<td>Obtaining the qualification through RPL is possible in only some countries (NO, SE, HU).</td>
</tr>
<tr>
<td><strong>Quality assurance</strong></td>
<td>Public authorities are in charge of ensuring the quality of vocational education institutions and examination centres (the State Education Quality Service in LV, the Swedish Schools Inspectorate, Quality Assurance Framework for VET in HU), and training providers (the VET county board in NO).</td>
<td>In NO and IT, the responsible bodies act on the regional level.</td>
</tr>
<tr>
<td><strong>Purpose of the qualification in education</strong></td>
<td>In all cases it is possible to continue education after attaining this qualification. The (vocational) education systems in the analysed countries have a clear progression route from this qualification, which is on level 4, to the next levels within HE. There is no information on the possibility of progressing to level 5 qualifications.</td>
<td>No information on quality assurance for PL.</td>
</tr>
<tr>
<td><strong>Reference to the occupational context</strong></td>
<td>The CNC operator can be employed in several branches, such as, e.g. chemical, mechanical, oil related, and the pharmaceutical industries. In LV and SE, this qualification is listed in their national occupational classification.</td>
<td>-</td>
</tr>
<tr>
<td><strong>International standards</strong></td>
<td>In the analysed countries, this qualification is not linked to any international standards.</td>
<td>-</td>
</tr>
</tbody>
</table>
Horizontal comparison of two selected qualifications

Validation of informal and non-formal learning

In all analysed countries, this qualification can be attained through the validation of informal and non-formal learning and the system of validating previously achieved learning outcomes (RPL).

In HU and NO, the duration of the training can be reduced in the adult training system as a result of the prior learning of the participant, and in this way, the competences achieved through non-formal or informal learning can be recognised.

Table 5: Comparative analysis of the context information: Mechanical engineer

<table>
<thead>
<tr>
<th>Context information</th>
<th>Similarities of the solutions</th>
<th>Main differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of qualification</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>Access rights</td>
<td>In all analysed countries, the access requirement to this qualification, and thus to higher education, is having a qualification at level 4 of the national qualifications framework, which is the upper secondary school leaving certificate. There is no information on the use of level 5 qualifications.</td>
<td>-</td>
</tr>
<tr>
<td>Purpose of the qualification in the labour market</td>
<td>The holder of a mechanical engineer qualification is versatile and can choose work in many different fields, both in the private and public sector. A mechanical engineer is a professional capable of carrying out many different roles in all major industrial sectors. Mechanical engineers find jobs in the mechanical industry, in process industries, in petroleum and offshore (NO), designing industry and other sectors, which perform designing, production, setting, technical services of equipment and machines (LV), building, electric and computer industries (SE). Mechanical engineers employed in the public sector can be found in such areas as urban planning, energy supply and properties maintenance (SE). The qualification provides access to jobs offers for the regulated professions and second cycle university courses (IT).</td>
<td>The country descriptions emphasise slightly different aspects.</td>
</tr>
<tr>
<td>Recognition practice (certification)</td>
<td>In all countries, the qualification of a mechanical engineer is awarded by higher education institutions, which are the competent bodies to issue Engineer diplomas (level 6). To obtain the degree of Engineer, a candidate must have passed at least 180 ECTS and written and defended a bachelor’s thesis (LV, NO, PL, IT).</td>
<td>In PL, the minimum number of ECTS points is 210.</td>
</tr>
<tr>
<td>Validation practices</td>
<td>In each of the analysed countries, the same higher education institutions that award the qualification also perform validation.</td>
<td>-</td>
</tr>
</tbody>
</table>
Quality assurance
In each of the analysed countries, the quality assurance of this qualification is provided within the framework of the national accreditation system for higher education. In each case, there is a national quality assurance agency (the Academic Information Centre – LV, NOKUT – NO, the Polish Accreditation Committee, the Hungarian Accreditation Committee, ANVUR – IT). HE institutions design their own courses and programmes in accordance with the national regulations on QA in HE. HE institutions are required to develop their own QA systems and carry out self-assessments.

Purpose of the qualification in education
In each of the analysed countries, the holders of the qualification have the right to study in Master’s programmes (level 7).

Reference to the occupational context
The qualification is designed to prepare students for a wide variety of jobs, in particular in machine and electronic industries, energy management, food processing industries. In LV, this qualification is registered in the national occupational classification based on ISCO-08 and included in the sectoral qualifications framework of the metal working and mechanical engineering industry. In SE, the qualification of mechanical engineer is registered in the national classification of occupational standards (Standard för yrkesklassificering, SSYK).

International standards
International standards related to this qualification in terms of agreements used in the process of validation and quality assurance refer to the Bologna Process and the qualifications framework for higher education (QF-EHEA).

Validation of informal and non-formal learning
In each of the analysed countries, it is possible to validate previously achieved learning outcomes for higher education qualifications, according to the laws and regulations in place relating to HE. Some countries show some limitations to RPL:
- NO: access to RPL based on an individual assessment of formal, informal and non-formal learning is open to applicants aged 25 or older.
- PL and HU: the number of ECTS that can be obtained through RPL are limited to 70% of the entire programme.

5.2. Learning outcomes analysis
The analysis of learning outcomes indicates that there are general similarities in the “core” activities of both qualifications under consideration. The hard core elements were quite easy to distinguish, which suggests that the analysed qualifications are indeed similar and therefore comparable. There were two main differences between different countries. First of all, the role of general knowledge is not clear. This was noticeable in the case of Mechanical Engineer, where some of the descriptions presented only vague
information (e.g. knowledge of mathematics), whereas others had much more detail. This is even more evident in the case of CNC Operator: in some descriptions, knowledge is described in detail, in the extreme case of Poland, it was totally omitted.

A second difference was the approach to competences. As in the case of knowledge, some countries described it broadly, while others virtually skipped it. An important example is the category of “responsibility” – a different assessment of this competence may lead to having a different level assigned to the qualification, so it is crucial to check if the differences result from the different approaches to preparing the description, and not the qualification itself. Participants also concluded that the discussion about the approach to competences is in line with recent discussions on this topic that have been taking place at the European level.

Evidence for these statements are illustrated by the results of the analyses presented further in this section.

### 5.2.1. Levels assigned to the qualifications in participating countries

Learning outcomes are the most important elements of descriptions of qualifications.

It needs to be emphasized that despite the fact that qualifications are similarly named and have some similarities in what they contain, some differences also exist among countries in the case of the CNC machine operator qualification, as shown in Table 6.

<table>
<thead>
<tr>
<th>Country</th>
<th>Level assigned to the mechanical engineer qualification</th>
<th>Level assigned to the CNC machine operator qualification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Sweden</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Latvia</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Hungary</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Italy</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Poland</td>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>

11 The table presents the level of the particular country’s NQF. In all six countries, however, their referencing reports state that these levels are equal to the EQF levels.
The horizontal comparison is aimed at answering the questions of 1) whether qualifications having the same level in different countries can be viewed as comparable and 2) why seemingly similar qualifications have different levels. The comparison must therefore be based on three elements:

1. Comparability of the language used,

2. Comparability of the scope of the descriptions (their level of detail),

3. Verification of the levelling of the learning outcomes.

Each of these elements impacts on how the qualifications are understood in a given country, therefore influencing the final decision on the level which should be assigned to them.

5.2.2. Data gathered

The fiche has one row for presenting the learning outcomes of qualifications, entitled “Learning outcomes”, with a detailed description: “List of learning outcomes, according to the method described above”. Such a formulation did not require partner countries to present the learning outcomes in any specific way. The unedited, original form allowed all aspects of the national differences between qualifications to be seen.

It was agreed that all countries would send fiches that included the necessary information on learning outcomes. The information was detailed enough to enable a proper analyses to be made of learning outcomes. The only limitation was the different scope and detail of the descriptions. For this reason, SE qualifications were excluded from some of the exercises. However, these differences did not affect the final conclusions.

It was shown that all countries used the language of learning outcomes, which is consistent with the EP Recommendation and Bologna Process (in the case of mechanical engineer). There were some differences in a language that led to difficulties in distinguishing the hard core categories, however, they were usually the effect of the different scopes and extent of detail of the description. For example, we assume that all of the following statements describe similar learning outcome, even though they differ significantly in length: “plan work based on drawings, other documents and procedures” (NO), “Study the drawing of the new workpiece, technological documentation” (HU), “understand the technical drawings” (IT).

Table 7 illustrates the differences in the language used to describe learning outcomes for the CNC machine operator qualification.
Table 7: Comparison of the language used in describing learning outcomes for the CNC machine operator qualification in the area of: use of documentation and drawings

<table>
<thead>
<tr>
<th>Country</th>
<th>Learning outcome(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>Plan work based on drawings, other documents and procedures</td>
</tr>
<tr>
<td>Latvia</td>
<td>2. Read drawings</td>
</tr>
<tr>
<td></td>
<td>3. Read technical documentation</td>
</tr>
<tr>
<td>Poland</td>
<td>Uses technological documentation for CNC machine tools / machines in order to identify their technical parameters</td>
</tr>
<tr>
<td>Hungary</td>
<td>Study the drawing of the new workpiece, technological documentation</td>
</tr>
<tr>
<td>Italy</td>
<td>Understand the technical drawings</td>
</tr>
</tbody>
</table>

Source: Own work based on data gathered.

5.2.3. Methods of analysis

As shown in the previous section, differences in the language used and volume of the descriptions do not allow us to perform clear, one-to-one comparisons. Therefore, a three step process was proposed to ensure that the conclusions are indeed comparable.

The proposed method of analysis was based on the following operations:

1. Identify the common elements of the qualifications’ descriptions.
2. Choose the “hard core” elements.
3. Check if inconsistencies explain the differences in the assigned levels.

In first step, the learning outcomes of all qualifications were grouped in order to grasp the similarities and differences. We tried to identify all of the learning outcomes for all of their categories, which can be considered identical. Such identifications are sometimes dubious, since the scope of descriptions highly differed (see previous section), however it was still possible to grasp key intent.

The second part involved distinguishing key elements that appear in all of the descriptions to identify the “hard core” of the qualifications. For example, the element that appeared in all descriptions of the CNC Operator was “Preparation to work”. Therefore, we propose to declare this activity as a hard core element of the qualification. If the learning outcome appeared in a majority but not all of the descriptions, we usually proposed to have it considered as a hard core element, with an annotation on the differences. The elements that appear only in one or two qualifications were excluded from the hard core and set aside for further discussions, since they could help in answering the question about differences in levelling.

In a final stage of the analysis, we checked to determine whether the hard core elements are at the same level of complexity. We also considered whether the “non-hard
core” elements of the descriptions could be used to explain the differences in levelling. It was, however, concluded later that such opinions cannot ignore the context information, which can be the most important factor in such differences.

5.2.4. Results

As described above, first step involved the identification of similarities. In the case of the CNC machine operator, we identified 15 categories of learning outcomes, whereas in case of the mechanical engineer – 27. Such a difference can be easily understood by comparing the scope of these qualifications: the former lasts usually 6 to 12 months, while the latter 6 or 7 semesters. The difference in the extent of detail of the categories is also easily visible: the CNC machine operator is much more detailed, the description involves very specific and concrete tasks carried out in this occupation, while the second qualifications focuses only on general patterns.

There were several problems identified:

- Sweden was excluded from the analysis of the CNC machine operator qualification, since the description was too general to be comparable with other countries. This was also the case with the mechanical engineer, so the results of this country are to be considered as most dubious (extreme). However, it was still possible to identify some common patterns, showing the usefulness of the chosen method.

- In the case of Latvia, some of learning outcomes have almost identical meaning (e.g. “Comply with professional and general ethic principles” and “Ability to comply with basic principles of professional and general ethics”). Such cases were omitted.

- Only Italy explicitly showed the knowledge learning outcomes for the qualification of CNC operator. However, some aspects were implicitly visible in other cases.

- The Latvian description of knowledge (in both qualifications) is incomparable with the descriptions of other countries (though this is not a case with the categories of skills and competences).

Attachments 1 and 2 present all the groupings.

In the second stage, all of the groups of learning outcomes were divided into three categories:

- Key groups, that appear in all or virtually all countries – this category has to be considered as hard core (marked green in the attachments),

- Groups of minor importance that appear in some of the countries, but cannot be unequivocally considered as hard core (marked yellow),

- Individual learning outcomes that appear only in single countries and cannot be grouped in any broader category – this category can potentially serve as an explanation of the differences in levelling (marked red). Table 8 and Table 9 present these groups for the CNC operator and mechanical engineer qualifications respectively.
### Table 8: Groups of learning outcomes for the CNC machine operator qualification

<table>
<thead>
<tr>
<th>Group of learning outcome</th>
<th>Countries, where the group was identified</th>
<th>Category of group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation to work – selection of equipment</td>
<td>NO, LV, PL, IT</td>
<td>Hard core</td>
</tr>
<tr>
<td>Preparation to work – checking the machines</td>
<td>HU, LV, PL, IT</td>
<td>Hard core</td>
</tr>
<tr>
<td>Use of documentation</td>
<td>HU, NO, LV, PL, IT</td>
<td>Hard core</td>
</tr>
<tr>
<td>Operating the CNC machine</td>
<td>HU, NO, LV, PL, IT</td>
<td>Hard core</td>
</tr>
<tr>
<td>Writing a CNC program</td>
<td>HU, NO, PL, IT</td>
<td>Hard core</td>
</tr>
<tr>
<td>Replacement HU</td>
<td></td>
<td>Individual cases</td>
</tr>
<tr>
<td>Post-work operations</td>
<td>HU, NO, PL, IT</td>
<td>Hard core</td>
</tr>
<tr>
<td>Maintenance</td>
<td>LV, PL, IT</td>
<td>Minor concern</td>
</tr>
<tr>
<td>Measurement and control</td>
<td>HU, NO, LV, PL, IT</td>
<td>Hard core</td>
</tr>
<tr>
<td>Corrections</td>
<td>HU, NO, PL, IT</td>
<td>Hard core</td>
</tr>
<tr>
<td>Safety of work</td>
<td>NO, LV, IT</td>
<td>Minor concern</td>
</tr>
<tr>
<td>General knowledge</td>
<td>HU, NO, LV, IT</td>
<td>Minor concern</td>
</tr>
<tr>
<td>Communication skills</td>
<td>HU, NO, LV</td>
<td>Minor concern</td>
</tr>
<tr>
<td>Responsibility</td>
<td>NO, LV</td>
<td>Individual cases</td>
</tr>
<tr>
<td>Legal aspects</td>
<td>NO, LV</td>
<td>Minor concern</td>
</tr>
</tbody>
</table>

### Table 9: Groups of learning outcomes for the mechanical engineer qualification

<table>
<thead>
<tr>
<th>Group of learning outcome</th>
<th>Countries, where the group was identified</th>
<th>Category of group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Background knowledge: maths, physics, computer science</td>
<td>PL, HU, NO, LV, IT</td>
<td>Hard core</td>
</tr>
<tr>
<td>Supplementary knowledge of other disciplines</td>
<td>PL</td>
<td>Individual cases</td>
</tr>
<tr>
<td>Knowledge of external factors (economic, legal, etc.)</td>
<td>PL, HU, IT</td>
<td>Minor concern</td>
</tr>
<tr>
<td>General knowledge of mechanics</td>
<td>PL, HU, LV, IT</td>
<td>Hard core</td>
</tr>
<tr>
<td>Knowledge of modelling</td>
<td>PL, HU</td>
<td>Minor concern</td>
</tr>
<tr>
<td>Knowledge of designing</td>
<td>PL, HU, LV, IT</td>
<td>Hard core</td>
</tr>
<tr>
<td>Knowledge of measurement</td>
<td>PL, HU</td>
<td>Minor concern</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------</td>
<td>---------------</td>
</tr>
<tr>
<td>Knowledge of equipment and techniques</td>
<td>PL, NO, IT</td>
<td>Minor concern</td>
</tr>
<tr>
<td>Search for information</td>
<td>PL, HU, NO, IT</td>
<td>Hard core</td>
</tr>
<tr>
<td>Communication skills</td>
<td>PL, HU, NO, LV</td>
<td>Minor concern</td>
</tr>
<tr>
<td>Presentation skills</td>
<td>PL, HU, NO, LV, IT</td>
<td>Hard core</td>
</tr>
<tr>
<td>Linguistic skills</td>
<td>PL, LV</td>
<td>Minor concern</td>
</tr>
<tr>
<td>Self-education skills</td>
<td>PL, HU, LV, IT</td>
<td>Hard core</td>
</tr>
<tr>
<td>Skills of experimental processes</td>
<td>PL, LV, IT</td>
<td>Minor concern</td>
</tr>
<tr>
<td>Problem formulation</td>
<td>PL, HU</td>
<td>Minor concern</td>
</tr>
<tr>
<td>Designing skills</td>
<td>PL, HU, LV, IT</td>
<td>Hard core</td>
</tr>
<tr>
<td>Use of IT</td>
<td>PL, HU, LV</td>
<td>Minor concern</td>
</tr>
<tr>
<td>Modeling skills</td>
<td>PL, HU, NO, LV</td>
<td>Minor concern</td>
</tr>
<tr>
<td>Technical skills</td>
<td>PL, LV</td>
<td>Individual cases</td>
</tr>
<tr>
<td>Safety of work</td>
<td>PL, HU, LV</td>
<td>Minor concern</td>
</tr>
<tr>
<td>Awareness of the methods and scientific knowledge</td>
<td>PL, HU, NO, LV</td>
<td>Hard core</td>
</tr>
<tr>
<td>Legal aspects of the engineering process</td>
<td>HU, LV, IT</td>
<td>Minor concern</td>
</tr>
<tr>
<td>Economic aspects of the engineering process</td>
<td>PL, LV</td>
<td>Minor concern</td>
</tr>
<tr>
<td>Openness and creativity</td>
<td>PL, HU, NO</td>
<td>Minor concern</td>
</tr>
<tr>
<td>Awareness of social responsibility</td>
<td>PL, HU, NO, LV</td>
<td>Hard core</td>
</tr>
<tr>
<td>Cooperation</td>
<td>PL, HU, NO, LV, IT</td>
<td>Hard core</td>
</tr>
<tr>
<td>Ethical behaviour</td>
<td>PL, HU, LV</td>
<td>Minor concern</td>
</tr>
</tbody>
</table>
5.3. Comparison of the methods of levelling:

5.3.1. Synthesis of results

The comparative analysis of the methods of levelling found that there are two main approaches to levelling in the countries participating in the pilot project:

1. By analysing the learning outcomes in order to find the relevant level descriptors that best fit them (referred to as the “best fit method”. This is a kind of “bottom-up” approach: the provider of the qualification applies to the qualifications register or other institution for an evaluation of the learning outcomes and assignment to a NQF level,

2. By formulating learning outcomes according to the level descriptors published and used as an instruction for designing the content of a qualification. This is a kind of “top-down” method: the designers of the qualification are adapting it to existing NQF requirements. For provisional working use, the team named this method “full-fit”.

We would like to emphasize that names “best fit” and “full fit” are provisional – there are some controversies among partners about their use, if they best describe the difference. This issues will be further discussed to determine whether there are better alternatives to this naming convention.

The main difference between these two methods lies in their order: in the “best fit” method, the level is chosen on the basis of already defined learning outcomes. As a consequence, it often happens that some learning outcomes fit more than one level of the qualifications framework and a decision has to be made on which level fits best. In contrary, with the “full fit” method, the learning outcomes are defined in a way that ensures their agreement with some top-down determined level descriptors.

In the majority of countries, the “best fit” method is used for non-formal or market qualifications, while the “full fit” is reserved for the formal system of education. This is not, however, a one-to-one division; it is not uncommon to find formal qualifications levelled with the best fit method, as well as (though much less often) using the “full fit” method with non-formal qualifications.

It is also to be noted that the “full fit” method may at times involve some kind of political decision – it is, for example, stated in the law that all qualifications awarded to persons who graduated secondary school should be at level 4. In such cases, it is therefore extremely important to develop procedures that ensure the validity of this process. In particular, it has to be proven that learning outcomes defined in the descriptions of qualifications actually indicate the competences that a learner attains in the process of education.

The reference between learning outcomes and the level descriptors is the common, unavoidable and irremovable hard core element of both methods, as well as controlling the process of levelling by the quality assurance mechanisms.

The evidence and illustration of this statement is provided by the analysis presented below.
5.3.2. Data gathered and method of analysis

The first attempt at a horizontal comparison revealed that the method of levelling can affect its results. It was therefore agreed that in order to obtain comparable and exhaustive results, it is necessary to carefully examine the approaches to levelling in the given countries.

The first fiche contained only a brief question on the methods of levelling: “Basis of levelling. The description of the method that is used in a given country to determine the level of a qualification.” This was however too general and it was impossible to make any kind of comparison. As a consequence, a second version of the fiche was prepared, where more specific questions were asked. This fiche is presented in Table 10.
Table 10: Detailed fiche for the methods of levelling

*Basis of levelling.* The description of the method that is used in a given country to determine the level of qualification. It should be indicated, how particular elements involved affect the result of the levelling. (It could happen, that not only the learning outcomes, but other elements – such as social judgement, the level of achieved competences [assessed by tests], state regulation, etc. – are considered for a certain extent during the decision making process on levelling.) They should be made visible as much as possible.

**Additional questions.**
**Is the same method of levelling used in the country for all types of qualifications?**

1. **If yes:**
   a. What is the legal context of the method of levelling? (e.g. is there a legal act introducing the method? What kind?)
   b. What is the method itself? – show the general scheme of it.
   c. Who develops and formally accepts the method?
   d. Is the levelling of qualifications voluntary or compulsory? And/or – for what types of qualifications is it voluntary, for what is it compulsory?
   e. How does levelling work in practice? (institution, procedure, who finally decides on the number of the level assigned to the qualification? Any other important issues?)
   f. In what way are the descriptors of the NQF are used in the levelling?
   g. What other factors (besides descriptors) are taken into account in the levelling decision?
   h. What is the role of the qualification's stakeholders in levelling?
   i. Any other important information.

2. **If not the same method:**
   i. How many different methods of levelling have been adopted in the country?
   ii. What is the legal context of the methods of levelling? (e.g. is there a legal act introducing the method? What kind?)
   iii. On what basis (and why?) are qualifications grouped (indicated to be included into a group) while given with the method of levelling?
   iv. Who develops and formally accepts the levelling method to be used for each group of qualifications?
   v. What are the methods themselves? – show the general scheme of each of them.
   vi. Is the levelling of qualifications voluntary or compulsory for every group of qualifications and within the group? And/or – for which groups of qualifications is it voluntary, for which groups is it compulsory?
   vii. How does levelling work in practice for each group of qualifications? (institution, procedure, who finally decides on the number of level assigned to the qualification? Any other important issues)
   viii. In what way are the NQF descriptors used in the levelling of each group of qualifications?
   ix. What other factors (besides descriptors) are taken into account for the levelling decision for each group of qualifications?
   x. What is the role of the qualification's stakeholders in the levelling of each group of qualifications?
   xi. Any other important information.
In conclusion, the analysis of information gathered showed that there are at least several approaches to levelling. Furthermore, in most countries, there are different approaches to different types of qualifications. Bearing this in mind, there are many similarities proving that the methods of levelling (and their results) can be considered comparable.

Table 11 summarizes the information gathered in the fiches submitted by partner countries.

### Table 11: Comparative analysis of levelling methods

<table>
<thead>
<tr>
<th>Number of methods</th>
<th>Similarities of the solutions</th>
<th>Main differences</th>
</tr>
</thead>
</table>
|                   | In most cases, there are at least two separate methods of levelling: one for formal qualifications, a second for qualifications awarded outside the public education system (NATIONAL STATUS OF A QUALIFICATION). Furthermore, in some cases (PL, HU), the methods used in general education and for academic qualifications slightly differ. | 1 – IT, LV  
2 – SE, HU (top-down for formal qualifications, bottom-up for market qualifications), NO (two approaches, for qualifications levels 2-4 and 5-8).  
3 – PL (bottom-up for market qualifications, top-down for formal (public) ones; different approaches for school and HE qualifications) |

| Legal context | Levelling of qualifications is present in the legislation of all analysed countries. | The status of acts, where such a description appears, is mixed. Laws in NO and PL; referencing reports or other documents: SE, HU, LV; regional documents: IT |

| Description of the methods | There are two main approaches to the issue of levelling:  
1. Comparison of learning outcomes with level descriptors (often referred to as “best fit method”, though for the purpose of this document the name “bottom-up” was proposed)  
2. Development of curricula in order to fit the requirements described in NQF level descriptors (sometimes (i.e. SE) referred to as “full fit method”, however the name proposed above – “top-down”, appears to be better suited). The “bottom-up” method is in place in all countries in the case of qualifications awarded outside the public system. Only the LV fiche suggests using this method in the case of formal school qualifications.  
The top-down method is usually used for formal qualifications, in particular, academic ones. PL academic qualifications are a good example of this.  
General education qualifications were sometimes (IT, PL) levelled according to governmental agreement, without using the procedures described above. However, in such cases one of the methods (usually the top-down) were used implicitly. | Separate methods for higher education qualifications were described only by PL and HU. |
| Who develops the method | Methods were prepared in parallel with the development of NQFs or while preparing the Referencing Reports. As a consequence, the institutions responsible for a methodology were also involved in the referencing processes. In all cases, an institution that took part in this process was a governmental one (Ministry of Education), as the major player or the body that approves solutions prepared elsewhere. | In PL HE, qualifications are the responsibility of the Ministry of Science and Higher Education. |
| Practice of levelling (institutions, procedures) | In the case of VET or market qualifications, all countries have some type of entity responsible for levelling. In the case of general education qualifications, this is usually the responsibility of the Ministry of Education. | HU and PL show separate procedures for HE qualifications, which are carried out by dedicated institutions. |
| Factors besides LOs, that are taken into consideration in levelling | Learning outcomes are the key factor influencing levelling. In the case of formal qualifications (in particular, those of general education) the social context is taken into account. | In some cases (SE, PL), other factors, such as validation or quality assurance procedures, are also taken into account; however, their role is ancillary to the analysis of learning outcomes. The social or political context of levelling is not always explicitly shown. |
| Role of stakeholders | In virtually all cases, stakeholders were involved in the process of developing the methodology of levelling or levelling itself. However, their role is usually advisory rather than a decisive one. | No information provided on the role of stakeholders in Latvia. |
6. Actual qualifications as an illustration of the aforementioned comparisons

The HC team decided that descriptions of the actual qualifications of CNC operator and mechanical engineer awarded by existing education or training institutions in the countries participating in the pilot project are a necessary supplement for the analysis of the levelled qualifications. These descriptions were used as an additional explanation of the differences noted in the analysis presented in the above sections of the report. They were also helpful in providing a better understanding of the context information. The examples of real practices – sets of learning outcomes, curricula, syllabi, methods of teaching and the validation of learning outcomes, as well as quality assurance mechanisms, allowed us to gain deeper insight into the actual implementation of qualifications at existing education institutions and systems.

For a concise and similarly ordered set of information, the HC working team used 2 fiches for the actual qualifications – see the tables below.

<table>
<thead>
<tr>
<th>Table 12: Fiche for mechanical engineer</th>
</tr>
</thead>
<tbody>
<tr>
<td>The “actual qualification” case – fiche for the mechanical engineer qualification:</td>
</tr>
</tbody>
</table>

**A: General information**

1. Title of the diploma (bilingual)
2. Institution awarding the diploma
3. Specialization: (or list of specializations - about 5 can be awarded at the WUT)
4. NQF level
5. ECTS
6. Period of study
7. Enrolment / access rules
8. Required prior qualification(s)
9. Possibility of RPL
10. Institution conducting the external evaluation

**B: In-depth information – in relation to the NQF**

1. Short description of designing the study programme / curriculum
2. Validation practices of the expected learning outcomes
3. Who decides about the set of expected learning outcomes which must be achieved to have a diploma awarded? On what basis?

4. Who and in what way ensures that the set of expected learning outcomes is actually covered by the learning outcomes provided by the courses (teaching units, modules …)?

5. Are any international standards for engineering education incorporated into the programme?

6. Are any professional standards incorporated into the programme?

Appendices:

- set of learning outcomes – basis for the program / curriculum categorized by knowledge, skills and (social) competences
- the study programme (curriculum)
- if available: syllabi of the courses - examples
- if available: reports of the qualitative evaluation (internal and external) of the programme design relative to the expected LOs and their validation.

Table 13: Fiche for CNC operator

<table>
<thead>
<tr>
<th>A: General information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Title of the qualification (bilingual)</td>
</tr>
<tr>
<td>2. Institution awarding the qualification (the certifying institution)</td>
</tr>
<tr>
<td>3. Institution responsible for the validation of the qualification (if different than the certifying institution)</td>
</tr>
<tr>
<td>4. Institution conducting the external evaluation</td>
</tr>
<tr>
<td>5. NQF level</td>
</tr>
<tr>
<td>6. Period of the programme</td>
</tr>
<tr>
<td>7. Enrolment / access rules (What are the requirements for applicants: formal, financial, etc.)?</td>
</tr>
</tbody>
</table>
The pilot project on the horizontal comparison of levelled qualifications

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.</td>
<td>Required prior qualification(s)</td>
</tr>
<tr>
<td>9.</td>
<td>Possibility of RPL</td>
</tr>
<tr>
<td>10.</td>
<td>Requirements for internal quality assurance</td>
</tr>
<tr>
<td>B:</td>
<td>In-depth information – in relation to the NQF</td>
</tr>
<tr>
<td>11.</td>
<td>Short description of designing the programme / curriculum</td>
</tr>
<tr>
<td>12.</td>
<td>Validation practices of expected learning outcomes</td>
</tr>
<tr>
<td>13.</td>
<td>Are any international standards incorporated into the programme?</td>
</tr>
<tr>
<td>14.</td>
<td>Are any professional standards incorporated into the programme?</td>
</tr>
</tbody>
</table>

**Appendices:**

- set of learning outcomes – basis for the programme / curriculum categorized by knowledge, skills and (social) competences
- the study programme (curriculum)
- if available: syllabi of the courses – examples
- if available: reports of the qualitative evaluation (internal and external) regarding the programme design relative to the expected LOs and their validation.

The complete descriptions of the actual qualifications of the CNC operator and the mechanical engineer awarded by the Swedish school and HEI is presented in Appendix 9.2.
7. General conclusions and lessons learned

7.1. General conclusions of the project

The national approaches to describing qualifications show great diversity, including the level of detail used to describe qualifications, the different language used in the description and definitions of learning outcomes. There are also differences in the approaches to assigning levels to qualifications.

Despite these differences, the analyses presented in the report and the work done show that tools which help to submit, present and organise information on similar qualifications can be developed. The fiche that was proposed based on the analysis of the country examples can be used and further developed to become a common tool to determine the comparability of qualifications in EU member states.

There are three broad areas that need to be included in comparisons of qualifications.

First, **learning outcomes**. The national descriptions of learning outcomes differ in the level of detail as well as in the approach to describing qualifications. But again, it is possible to identify the common “core” of the description of the learning outcomes, which allows qualifications to be compared. We were able to accomplish this with the two selected qualifications for all of the countries that participated in the exercise.

Second area is the **context information** on qualifications, which is needed to understand the variability of information and approaches at the national level. There is a common “core” of context information that emerges from the comparison of the national experiences. The terminology used in the areas of the European Qualifications Framework as well as the national frameworks, allows a common approach to describing and comparing qualifications to be provided. The development of a framework for analysing context information also helped to develop a set of questions that can be used for the development of guidelines for future comparisons of qualifications.

Similarly, in the third area, the **method of levelling**, we see emerging core elements that are used by countries. These core elements are identified both in the assessment of the relation between learning outcomes and level descriptors, as well as in the quality assurance of the process of levelling. The QA of qualifications’ levelling is an important component of building trust at the national and European level.

Thus, as the main result of the project, we can conclude that comparisons can be made of the qualifications levelled in the participating countries. The pilot comparison was done during the work of the horizontal comparisons team. The up-to-date work on horizontal comparisons reached its aim. We believe that it advanced the work on developing a common understanding of the levelling approaches at the national level, which shows that comparability of qualifications’ levels is also possible with the use of the EQF as a meta framework. The exercise additionally confirmed that there is a great variety of national approaches, built on national policies and traditions, which needs
to be maintained. Nevertheless, finding the common “core” denominator for different approaches is possible.

This means that further work on developing the guidelines and exchange of country experiences in the peer learning approach can be done.

7.2. Lessons learned

The pilot study revealed several lessons that can guide further work in the area of developing tools for the comparability of qualifications.

The first lesson is that the national context matters. Comparing just methods of levelling or learning outcomes of qualifications is not sufficient. Context information is crucial in understanding not only commonalities, but also the differences in national approaches. Context information also helps identify the core components for the comparisons of qualifications.

Second, there is significant diversity of national approaches to describing and levelling qualifications. This diversity is an important part of the European qualifications landscape and should be maintained. The joint work of the countries can lead to the development of approaches to compare qualifications, while respecting national contexts, practices and solutions.

Third, the horizontal comparisons exercise confirmed that the “bottom-up” approach, that is, starting with national examples and in a stepwise method working on a fiche with common core elements, can lead to the development of tools that can be applicable to different EU member states as a part of the future referencing and peer-learning mechanisms.

Fourth, the cooperation between the countries involved in the HC has had several objectives related to the mandate received by the European Commission and by the EQF Advisory Group. It is important to underscore the ways of working and some goals that the group shared since the research work itself was a significant factor in achieving better transparency and mutual trust concerning the qualifications identified for the project among team members. A crucial elements of this process were:

Improving common comprehension and understanding of many aspects underlying the work of levelling and the methodologies adopted by different countries; these aspects need to be the basis for a more specific comparison. These aspects were:

- the institutional drivers that represent the different context of the educational and training systems,
- the different educational and training cultures underpinning the approaches to the qualifications frameworks and systems (labour market or education system oriented),
- the different methodological approaches and languages adopted for writing learning outcomes.
Improving the transparency of the contents of the qualifications, the learning outcomes attributed to these, the adopted level, starting from the use of ad hoc instruments such as a general fiche; context information; additional input within which the qualifications are placed,

Increasing knowledge underlying the methods of levelling and the criteria adopted by the countries. Progressive building of mutual trust, based on the evidence brought by the countries but also by other information supporting the methodological choices of the countries.

As result of this work, we suggest that improving understanding, transparency and mutual trust is a product of both the methodological evidence of the approach of levelling and of the strong work of cooperation among countries.

We would expect that these results can be extended to any country which will participate in future “horizontal comparison” research for the permanent referencing process.
8. Recommendations

8.1. General recommendations:

To further continue the work on horizontal comparison with the tools prepared in the HC pilot project.

To respect the diversity of national descriptions of qualifications and methods of leveling – but to protect the ability to make comparisons.

To make good use of the context information giving additional insight into the originality of qualifications and explaining the potential differences between qualifications named and levelled in the same way.

To continue the good tradition of the soft coordination approach, opening – in the case of qualifications frameworks – the floor to transparency, trust, and better understanding among countries.

To prepare and publish the guideline for the horizontal comparison of qualifications.

8.2. The draft short roadmap for further work on the horizontal comparison for 2017-18 – main elements and their agenda:

February – May 2017:

AG discussion and decision concerning the dissemination of the HC pilot findings,

AG discussion concerning the extension of the horizontal comparison analysis to other countries and its methodology,

AG discussion on referencing criteria taking into account the HC pilot findings,

AG plans concerning horizontal comparison capacity building PLA(s?), guideline, etc.

8.3. PLA on the horizontal comparison (May 2017) organised by Poland and making use of the HC pilot project. First assumptions:

Dissemination of the HC pilot project results,

Instruction on making use of the fiche,

Workshops: one each for 2-3 countries trying to compare “themselves” (chosen qualifications) with the help of the fiche and the general methodology elaborated in the HC pilot project.
9. Appendix:

1. Agenda of the HC team’s work
2. “The actual qualifications” – the Swedish case
3. The stages of the submission of context information
4. Tables of comparison of the hard core analysis of context information for the CNC operator qualification
5. Tables of comparison of the hard core analysis of context information for the mechanical engineer qualification
6. Summary of the analysis of context information
7. Tables of comparison of learning outcomes for the CNC operator qualification
8. Tables of comparison of learning outcomes for the mechanical engineer qualification