National Referencing Report of the Czech Republic

December 2015

3rd revised version

Drafted by the National Coordination Point of the Czech Republic (NCP CZ) at the National Institute for Education, Education Counselling Centre and Centre for Continuing Education of Teachers (NÚV) [Until July 2011 the National Institute of Technical and Vocational Education (NÚOV)]on the basis of materials prepared in the project NCP-EQF in cooperation with the Ministry of Education, Youth and Sports (MŠMT), the Centre for Higher Education Studies (CSVŠ), and Research Institute of Education (VÚP, since 2011 part of NÚV).

In 2013 was the report updated and in 2015 was revised with regard to the amendment of the Education Act and further changes carried out in the system of education in the Czech Republic.

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Executive Summary

The Recommendation on the Establishment of the European Qualifications Framework for Lifelong Learning on 23 April 2008, committed member states to relate their national qualifications systems to the EQF. This requires the fulfilment of ten criteria and procedures for referencing the national qualification levels to the EQF approved by the EQF Advisory Group. One of the criteria is the writing of this report on the course of the referencing process and its submission to the European Commission.

This report was prepared by the Czech NCP together with experts in various educational sectors and discussed with other stakeholders. It describes the results of the Czech referencing process, respecting all the conditions set out in the Recommendation and by the EQF Advisory Group.

The Czech Republic referenced its education and qualifications systems to the EQF. The existing classification system for qualifications awarded in initial education, the KKOV (Classification of Educational Qualification Types) and the levels in the NSK (National Register of Qualifications) permit a referencing to the EQF. This is possible because the curricula and legal framework for initial education, like the level descriptors and qualifications standards of the NSK, are based on the principle of learning outcomes.

The referencing procedure chosen simplified the initial phase of the process and permitted a rapid and transparent description and referencing of Czech qualifications. The results of the referencing process are considered by all participants as a starting point for further discussion on the need for a comprehensive national qualifications framework which would use common descriptors to describe the levels of all qualifications awarded.

The EQF Recommendation allows the referencing of national qualifications systems to the EQF. The Czech Republic thus referenced its qualifications in a manner which guarantees the referencing is based on a working, well tested system, which is understood by all stakeholders. The current referencing forms a national qualifications framework of a bridging type[1]. A comprehensive framework and its development is a subject for further discussion and decisions.

Methodology for the development of a qualifications framework for tertiary education[2] had been developed in the project Q-Ram (2009-2012). Self-certification in the context of the Bologna Process, a prerequisite for which is a tertiary qualifications framework, should be implemented after the formal approval and legal provison.

Chapter 1 of this report describes the reasons for the writing of this report and its goals.

[1] See the EQF Note 2: *Added Value of National Qualifications Frameworks in Implementing the EQF* http://ec.europa.eu/education/lifelong-learning-policy/doc/eqf/note2_en.pdf

[2] The words higher and tertiary are used interchangeably in this report to refer to all formal post-secondary education.

Chapter 2 describes the Czech education and qualifications systems.
Chapter 3 describes the fulfilment of the ten criteria and procedures set out by the EQF Advisory Group.
Chapter 4 describes expected steps that should be taken in the coordination of existing and future qualification frameworks in different educational sectors: for primary and secondary education, for tertiary education and for continuing education (the framework contained in the National Register of Qualifications - NSK).

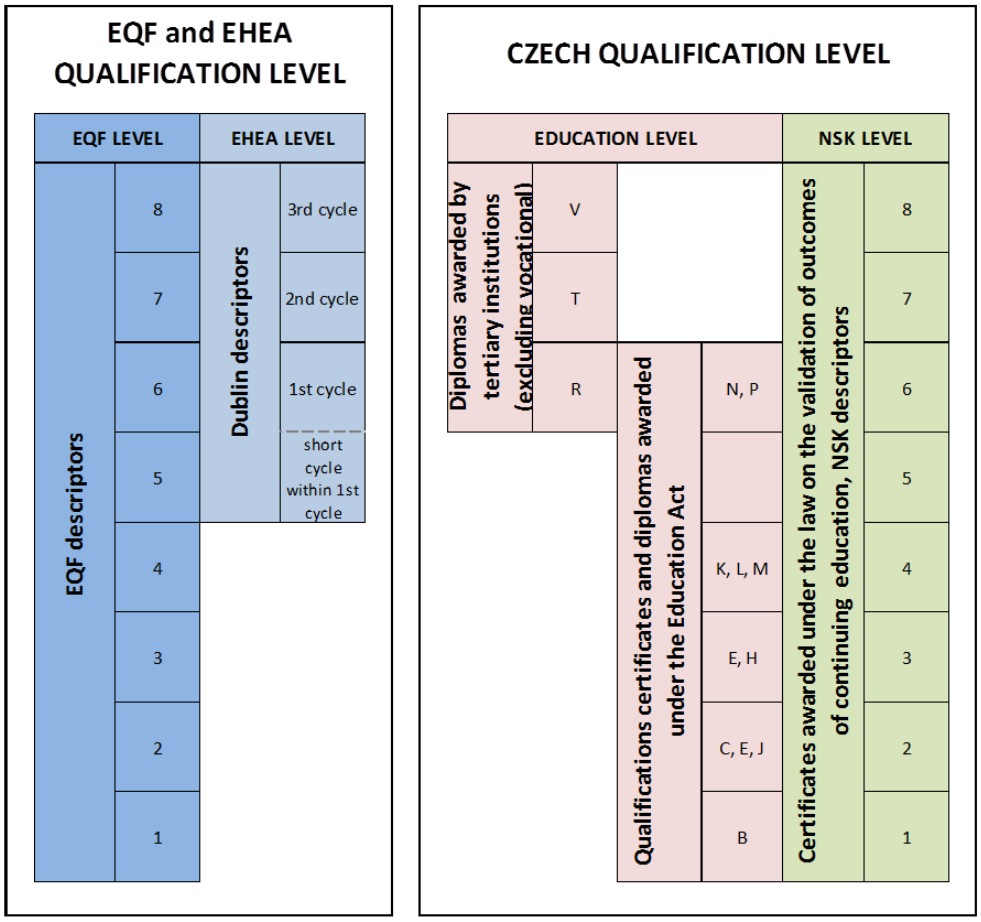
The report is followed by a number of appendices, which quote from supporting materials, demonstrating the correctness of the results of the referencing process.

The following Czech qualifications are referenced to the EQF:

- qualifications awarded in secondary education,
- qualifications awarded in tertiary education,
- qualifications awarded under the act 179/2006 Sb., on the Verification and Recognition of Further Education Results (qualifications in the NSK).

This includes all qualifications awarded in the Czech Republic which fit the definition in the glossary of the EQF Recommendation, where a **qualification** is understood to be "a formal outcome of an assessment or validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards". Qualification is always used in this sense in this report, although the term is sometimes used in other senses in the Czech Republic.

Fig. 1: Results of the referencing process



* The levels of primary, secondary and vocational tertiary education is given in the government directive 211/2010 Sb.[3] The classification of non-vocational tertiary programmes of study is found in the Classification of Educational Programme Types (KKOV). Further details may be found in Section 3.4

** Each qualification in the NSK (National Register of Qualifications) has a qualification level described by competences. NSK classification levels form a scale allowing the placement of all complete (comperehensive) vocational and vocational qualifications. The NSK currently lists vocational and complete vocational qualifications referenced to levels 2-7. For more details, see Section 2.4, Subsection 3.4.2 and Appendix III.3

*** This level does not currently correspond to any level of initial education in the Czech Republic.

[3] Nařízení vlády ze dne 31. 5. 2010 o soustavě oborů vzdělání v základním, středním a vyšším odborném vzdělávánání č. 211/2010 Sb. [The government directive on the Register of Educational Programme Types in Primary, Secondary and Vocational Tertiary Education, 211/2010 Sb.] only available in Czech http://www.msmt.cz/file/11266

Table 1: Classification codes for qualification levels

EQF	Category	Qualification and education level
1	B	**Special Education** Completion of an educational programme in a special school - 10 years
2	C	**Lower Secondary Education** Successful completion of a primary and lower secondary education programme - 9 years **Upper Secondary Education** One or two year programme for graduates of special schools
	J	**Upper Secondary Education** without Apprenticeship Certificate – 2 years of upper secondary study
	E	**Upper Secondary Education with Apprenticeship Certificate** Primarily for students with disabilities 2 years of upper secondary study
3	E	**Upper Secondary Education with Apprenticeship Certificate** Primarily for students with disabilities 3 years of upper secondary study
	H	**Upper Secondary Education with Apprenticeship Certificate** 3 years of upper secondary study
4	K	**Upper Secondary Education with Maturita Exam** General Education (Gymnazium) - 4 years of upper secondary study
	L	**Upper Secondary with Maturita Exam** Vocational Education with practical training - 4 years of upper secondary study
		Supplementary Study leading to a Maturita Exam 2 years of study after the Apprenticeship Certificate
	M	**Upper Secondary Education with Maturita Exam** Vocational Education - 4 years of upper secondary education
6	N	**Tertiary Vocational Education** DiS. degree 3–3.5 years of tertiary education
	P	**Education at Conservatories** DiS. degree 2 years of tertiary education
	R	**Bachelor's Programme** Bc. and BcA. degrees 3-4 years of tertiary education
7	T	**Master's Programme** Mgr., MgA., Ing., arch., MUDr., MDDr., MVDr., JUDr., PhDr., RNDr., Pharm.Dr., ThLic., and ThDr. degrees 2-3 years of tertiary education beyond Bachelor's or 4-6 years of tertiary education
8	V	**Doctoral Programme** Ph.D., Th.D. degrees 3-4 years beyond Master's

A brief outline of the ten criteria and procedures for referencing national qualification levels to the EQF

(For more detail, see Chapter 3.)

Criterion 1

The responsibilities and/or legal competences of all relevant national bodies involved in the referencing process, including the National Coordination Point, are clearly determined and published by the competent public authorities.

The Ministry of Education, Youth and Sports (MŠMT) is responsible for the referencing process. The ministry established the National Coordination Point (NCP CZ), which has responsibility for is the coordination of the referencing process. The NCP is part of the National Institute for Education (NÚV)[4].

In August 2010 the Ministry of Education approved a timetable[5] for the referencing process, in which the procedure is detailed, including tasks for the relevant bodies. The NCP advisory group includes representatives of a number of stakeholders: social partners, other ministries, regional governments and educational institutions. Other experts and stakeholders were involved in the process of preparing and critiquing the studies conducted during the referencing process and in the editing of the national referencing report. These are listed in Appendix I.

This national referencing report, which describes the referencing process and its outcomes, was approved by the Czech government in July 2011.

Criterion 2

There is a clear and demonstrable link between the qualification levels in the national qualifications framework or system and the level descriptors of the EQF.

The project NCP-EQF organised in 2010-2011 as part of the referencing process, commissioned studies analysing the learning outcomes stipulated in curricular documents for primary and secondary education, and in the relevant documents for tertiary education. These analyses demonstrated the connection between Czech qualification levels and EQF levels.

The level descriptors of the NSK were designed to be compatible with the EQF descriptors. Although they are not divided into knowledge, skills and competences, they are compatible with the EQF. The proposed referencing of NSK levels to EQF levels was approved by the Ministry of Education in 2010. All studies and material were, before their official publication, subjected to consultation and critiquing, and the link between national qualification levels and EQF descriptors was confirmed in

[4] The National Institute for Education, Education Counselling Centre and Centre for Continuing Education of Teachers (NÚV) was established in July 2011 by merging three agencies.

[5] *Přiřazování úrovní kvalifikací v ČR k úrovním Evropského rámce kvalifikací – Harmonogram prací* [*Referencing Czech qualification levels to the EQF – Timetable*] (MŠMT, NÚOV, September 2010, ref. no.: 20663/2010-24), only available in Czech

discussions with experts, stakeholders and decision makers. Further details may be found in Section 3.2 and in Appendix III.

Criterion 3

The national qualifications framework or system and its qualifications are based on the principle and objective of learning outcomes and linked to arrangements for validation of non-formal and informal learning and, where these exist, to credit systems.

Curricular documents for qualifications awarded in initial primary and secondary education are described in terms of expected learning outcomes. This allows them to be analysed and their types to be referenced to EQF levels.

In referencing tertiary education, the following factors were taken into account: laws and regulations, accreditation requirements, educational objectives and the Graduate Profiles. The description of newly approved qualifications is based on learning outcomes and this approach is carried further by consistent decisions of the Accreditation Commission, which in its *Standards for the Assessment of Applications for Accreditation, Broadening an Accreditation and Extending the Validity of Accreditation of Study Programmes and Study Fields* recommends the division of learning outcomes into knowledge, skills and competences.

The validation of the outcomes of informal and non-formal learning is permitted by the act 179/2006. Qualifications standards published in the register of vocational qualifications (NSK, www.narodni-kvalifikace.cz), are described in terms of learning outcomes and the demonstration of these outcomes in examinations is a requirement for the awarding of vocational qualifications.

Credit systems are used in the Czech Republic only in tertiary education (usually ECTS).

Criterion 4

The procedures for inclusion of qualifications in the national qualifications framework or for describing the place of qualifications in the national qualifications system are transparent.

Descriptions of all qualifications included in the Czech qualifications system follow clearly stated rules and are approved in a multistep process. Core curricula for initial primary and secondary education describe expected learning outcomes in each subject and are developed in cooperation with social partners. Core curricula are published by the Ministry of Education, Youth and Sports, which is legally required to consult with other relevant ministries, trade unions, employers' representatives and regional governments.
All tertiary educational programmes must be approved by the relevant accreditation commission.

The inclusion of qualifications in the register of vocational qualifications (NSK) follows guidelines set out in its procedural manual. Qualifications standards in the NSK must

be approved by the Ministry of Education, which guarantees their consistency with educational programmes in initial education and the appropriateness of the level assigned to them.

Criterion 5

The national quality assurance system(s) for education and training refer(s) to the national qualifications framework or system and are consistent with the relevant European principles and guidelines (as indicated in Annex 3 of the Recommendation).

The quality assurance system for education and training is anchored in the laws and regulations governing primary and secondary education, tertiary education, and validation of the results of further education and this quality assurance system forms an integral part of the process of awarding qualifications.

Consistency between the Czech quality assurance system and Common Principles for Quality Assurance in Higher Education and Vocational Education and Training in the Context of the European Qualifications Framework is discussed in Section 3.5.

The Accreditation Commission of the Czech Republic (for tertiary education) passed in 2010 the external evaluation examining the compliance with the "Standards and Guidelines for Quality Assurance in the European Higher Education Area" and fulfilled thus all relevant criteria for the membership in the European Association for Quality Assurance in Higher Education (ENQA).

Criterion 6

The referencing process shall include the stated agreement of the relevant quality assurance bodies.

Representatives of quality assurance bodies, *i.e.* the Czech School Inspectorate and the accreditation commissions, were consulted in the preparation of this report. The approval of the report by all quality assurance bodies forms part of the approval process at the Ministry of Education, where the report was reviewed by all departments and subsidiary agencies.

Criterion 7

The referencing process shall involve international experts.

The referencing process and the writing of the referencing report involved Stephen Adam, Simon Field and Karin Luomi-Messerer. These experts were chosen because of their areas of expertise and their experience in their respective fields (tertiary education, vocational education and referencing process).

The international experts met twice in Prague with the authors of the report, were asked to comment on the draft report and participated in the associated international conference on the referencing process in March 2011.

Their comments and recommendations were taken into account by the editorial board and incorporated into the final version.

Criterion 8

The competent national body or bodies shall certify the referencing of the national qualifications framework or system with the EQF. One comprehensive report, setting out the referencing and evidence supporting it, shall be be published by the competent national bodies, including the National Coordination Point, and shall address separately each of the criteria.

This report, written by the NCP CZ in cooperation with other stakeholders, explains and justifies the procedures and results of the referencing process and describes the fulfilment of the criteria set by the EQF AG. The procedure for the referencing process and timetable for the writing of the report were approved by the Ministry of Education. The validity of the results is confirmed by decision of the minister. The referencing report was approved by the Czech cabinet and has been published on the websites of the Ministry of Education and the NCP CZ.

Criterion 9

The official EQF platform shall maintain a public listing of member states that have confirmed that they have completed the referencing process, including links to referencing reports.

The approved version of the national referencing report in English translation will be submitted to the Commission and the EQF AG and will be available from the official platform of the EQF.

Criterion 10

Following the referencing process, and in line with with timelines set in the Recommendation, all new qualification certificates, diplomas and Europass documents issued by the competent authorities shall contain a clear reference, by way of national qualifications systems, to the appropriate European Qualifications Framework level.

Listing of the relevant EQF level on all documents and certificates awarded after completion of the primary, secondary and tertiary vocational education is defined by the regulation 3/2015 Sb., on certain certificates.

Certificates confirming qualifications gained within the National Register of Qualifications (NSK) contain the reference to the EQF level since 2012.

The National Europass Centre, Czech Republic, which, like the NCP CZ, is part of NÚV, carried out the adjustment of all templates of the Europass Certificate Supplement.

This document carries now a reference to an appropriate EQF level. This information can be found in the same field as the ISCED level.

The changes to diploma supplements have been recommended to higher education institutions by the Ministry. The issue will also be added to the agenda of ENIC/NARIC, the forum for Czech public, ministerial and private non-vocational tertiary institutions.

1. Introduction

1.1 Purpose of this report

The Czech Republic agreed to the principles of the EQF as a common European instrument by accepting the Lisbon Strategy and the concept of lifelong learning. The interest which the Czech Republic takes in the implementation of the EQF is demonstrated by its participation in all the associated activities and initiatives and the participation of Czech experts in advisory and working groups formed by the European Commission.

The principles on which the EQF is based are to various degrees incorporated in the reforms the Czech education and qualifications systems have been undergoing since 2004. The new curricular documents in primary and secondary education are based on the principles and goals of learning outcomes. The evaluation criteria of qualifications in the NSK are also formulated in terms of learning outcomes. In the area of tertiary education, the Czech Republic participated from the beginning in the Bologna Process. In 2001 it hosted a conference of ministers and in 2009 it chaired the Bologna Follow-Up Group. It introduced a three level (bachelor's, master's and doctoral) structure in university education in 1998 in anticipation of the Bologna Declaration.

Greater transparency in the European Higher Education Area through the existing instruments, Europass certificate and diploma supplements and the European Credit Transfer System (ECTS), supported by quality assurance systems, allows for simpler recognition of qualifications through the common understanding of learning outcomes and acquired competences, simpler both for purposes of further study and for employment.

Among the main tasks which the Recommendation for the implementation of the EQF set for the member states were:

- to use the EQF as a reference tool to compare the qualification levels of the different qualifications systems and to promote both lifelong learning, and equal opportunities in the knowledge-based society, an further integration of the European labour market,
- to relate their national qualifications systems to the EQF by 2010, in particular by referencing, in a transparent manner, their qualification levels to the levels set out in Annex II, and, where appropriate, by developing national qualifications frameworks in accordance with national legislation and practice,
- to adopt measures, as appropriate, so that, by 2012, all new qualification certificates, diplomas and 'Europass' documents issued by the competent authorities contain a clear reference, by way of national qualifications systems, to the appropriate EQF level,
- to use an approach based on learning outcomes when defining and describing qualifications, and promote the validation of non-formal and informal learning in accordance with the common European principles agreed in the Council

conclusions of 28 May 2004, paying particular attention to those citizens most likely to be subject to unemployment or insecure forms of employment, for whom such an approach could help increase participation in lifelong learning and access to the labour market,

- to promote and apply the principles of quality assurance in education and training set out in Annex III when relating higher education and vocational education and training qualifications within national qualifications systems to the EQF and
- to designate national coordination points linked to the particular structures and requirements of the member states, in order to support and, in conjunction with other relevant national authorities, guide the relationship between national qualifications systems and the EQF with a view to promoting the quality and transparency of that relationship.

The creation and submission of this referencing report, conforming to all agreed criteria, places the Czech Republic among the states which emphasise employability, competitiveness and mobility for purposes of work and study. The Czech Republic thereby agrees to the principle of transferability of comparable qualifications at all levels across the EU, set out in the EQF Recommendation. In view of the expanding cooperation among European countries, this sends an important signal to other EU member states.

More important still, it sends a signal that the Czech Republic recognises the following principles:

- emphasis on learning outcomes,
- validation of non-formal and informal learning,
- lifelong learning, and
- genuine cooperation with social partners and their involvement in the referencing process.

The submission of this referencing report is an important political signal of the Czech Republic's respect for European priorities.

The national referencing report of the Czech Republic is intended to be comprehensive. It gives a general overview of the Czech education and qualification system, describes the structure of qualifications awarded and presents the necessary evidence for their referencing to the EQF. The report was written to describe, clearly and understandably, the referencing of qualifications gained in the Czech Republic to the EQF. It is addressed to all interested parties, including political decision makers, employers and learners, both at a national and European level.

1.2 Legal framework of the referencing process

The following acts form the fundamental legal framework for the recognition of qualifications and their referencing to the EQF:

The act 561/2004 Sb., on Preschool, Elementary, Secondary and Tertiary Professional and other education, as amended, (the Education Act)[6] which governs all education in all schools and educational institutions except for higher education institutions and education of students in state care. This act formulates the foundations and goals of education and defines approaches to curricula enabling to create the content in individual schools in addition to the core curriculum specified by the state.

The act 111/1998 Sb., on Higher Education Institutions, as amended,[7] describes the goals and functions of non-vocational tertiary institutions, the role of the state and the institutions, specifies the types of institutions, their financing, the courses of study, the rights and responsibilities of students, and the status of academic staff.

The act 563/2004 Sb., on Educational Staff, as amended, specifies the positions of staff of schools and educational institutions, the qualifications required for these positions, continuing education and partially also the career structure.

The act 306/1999 Sb., on Granting Subsides to Private Schools, Nursery Schools and Facilities, as amended. The financing of public and denominational schools has been governed directly by the Education Act since 2005.

The act 179/2006 Sb., on the Verification and Recognition of Further Education Results, as amended, (the act on the Validation of Non-formal and Informal Learning - VNFIL) specifies the method of assessing competences, the rules governing the authorisation of certification bodies and the responsibilities of individual agencies involved. It established the National Register of Qualifications (NSK) containing complete vocational and vocational qualifications and their qualifications and assessment standards.

The acts listed above are further developed and specified in administrative regulations and whitepapers approved by the government[8].

There is general agreement among all stakeholders that these acts and regulations[9] provide an adequate legal basis for the referencing of Czech qualification levels to EQF levels.

1.3 The referencing process

The referencing of national qualification levels to the EQF is the responsibility of the Ministry of Education, which, according to the act 2/1969 Sb., on the Establishment of

[6] http://www.msmt.cz/uploads/Areas_of_work/legislation/IM_novelizovanyzakon561rijen2008a.pdf

[7] http://www.csvs.cz/projekty/2006_OECD/annex/act111.pdf

[8] *National Educational Development Programme of the Czech Republic* (White Paper) (ÚIV, 2001), *Strategy for Lifelong Learning*, (Ministry of Education, Youth and Sports, 2008), *Strategy for Education Policy of the Czech Republic until 2020* (Ministry of Education, Youth and Sports, 2014)

[9] Copies of all relevant laws and regulations are available at http://www.msmt.cz/file/11075

Ministries and Other Institutions of Central Government of the Czech Republic, is the competent institution.

Following the Recommendation on the Establishment of the EQF, the Ministry of Education decided in 2008 to establish the Czech National Coordination Point (NCP CZ) as part of the National Institute for Technical and Vocational Education (NÚOV) in Prague.

The Ministry of Education set up the NCP CZ in 2008.

NCP-EQF[10] projects between 2010-2015

The European Commission, to facilitate and accelerate the referencing process, decided to support those NCPs which fulfilled certain criteria with a grant. The NCP CZ prepared a project proposal, which the Commission approved. The Czech referencing process was supported by European Commission sources and by the Ministry of Education.

A number of studies, focusing on the tertiary and general education systems and quality assurance systems, were conducted in the course of the project. These studies also form the basis of certain chapters of this report, whose submission to the EQF Advisory Group and Commission is one of the criteria for referencing national levels to the EQF.

The NCP EQF was also in next years supported financially by the European Commission in the form of grants. The main goals of the projects are to raise the awareness of the EQF, to inform both the general public and experts about the newest development and advantages resulting from the existence of the EQF and to carry out preparatory steps needed for its implementation.

The Czech Republic has participated in two international projects related to referencing, SECCOMPAT and EQF-Ref.

Participation of the Czech Republic in international pilot projects

The Czech Republic, through NÚOV, participated in two international projects in the Leonardo da Vinci Programme (LLP LdV).

The first of these, in 2008-2010, was the project **SECCOMPAT[11]** dealing with the compatibility of sectoral qualifications in the fields of Construction and Hospitality among Lithuania, Ireland, France, Austria and the Czech Republic. An analysis of the knowledge, skills and competences of specific qualifications showed that sectoral qualifications are comparable between partner states and that EQF descriptors can be used for their comparison. Experience from the comparison and referencing of qualifications was incorporated in *Guidelines for the Application of the National Qualifications Frameworks and the European Qualifications Framework in the Comparison of Sectoral Qualifications between Countries*.

This has enabled the Czech Republic to compare the level descriptors and evaluation criteria of the National Register of Qualifications (NSK) with those of other European countries, and thus to test the practical applicability of the NSK in an international context.

[10] Grant application *Activities of EQF National Coordination Points with a view to implement the EQF at national level*. Contract number – EAC-2010-0117; registration no.: CZ 00022179

[11] LLP 2007-2013: EQF and compatibility of sectoral qualifications between the countries (SECCOMPAT) No. 137852-LLP-2007-LT-KA1-EQF

During 2009 – 2011 the project **EQF-Ref**[12] developed a format for national referencing reports, to contain only relevant and logically structured information. On the basis of the experience and examples of best practice from individual partner states (Austria, the Netherlands, Bulgaria, Finland and the Czech Republic) a report was produced with a comprehensive set of recommendations for the authors of national referencing reports, which should lead to greater transparency and comprehensibility.

The project, whose timing was convenient, allowed an exchange of information and experience among states and, because relevant actors were regularly kept informed of its progress, stimulated discussion of the referencing process at a national level. We have used the work of the project in preparing this report. Thus the project helped to create an atmosphere of mutual trust among the countries involved.

2. The Czech education and qualifications systems

The basic principles governing the provision of education in the Czech Republic are found in the *Charter of Fundamental Rights and Basic Freedoms*, which forms part of the constitutional framework of the Czech Republic.

Section 33 of the Charter of Fundamental Rights and Basic Freedoms states: "*Everyone has a right to education. School is compulsory for a term to be set by law. People have a right to free primary and secondary education according to their abilities.*"

The legal framework for education in the Czech Republic consists of the five acts listed in Section 1.2. Administrative regulations add detail for particular issues. Some questions are treated by decisions of the cabinet. These laws, regulations and decisions of the government are published in the official journal of the Czech Republic (Sbírka zákonů ČR).

The Ministry of Education is responsible for the state and development of the educational system and issues internal regulations in the Official Journal of the Ministry of Education, Youth and Sports. In areas relating to the labour market and career counselling, it cooperates with the Ministry of Labour and Social Affairs, and in other areas with other ministries, the Ministry of the Interior, Ministry of Defence and Ministry of Health.

The development of the national educational and qualifications systems in the Czech Republic has been closely linked to European developments since 1989. Even before its entry into the EU, the Czech Republic took part in European education programmes (Tempus, Socrates, Leonardo da Vinci and Youth in Action), followed European education strategies and took part in their formulation. It participated in the Bologna Process from its inception. In 2001 it hosted a ministerial conference. In 2009 it chaired the Bologna Follow-Up Group. It has implemented a three level tertiary structure and other measures, including diploma supplements and the European Credit Transfer System (ECTS). In 1997 the Czech Republic signed the Lisbon Convention on the Recognition of Qualifications concerning Higher Education in the

[12] LLP 2007-2013, Key Activity 1: EQF Referencing Process – Examples and Proposals (EQF-Ref) No. 147833-LLP-1-2008-1-AT-EQF

European Region. The entry of the Czech Republic into the EU in 2004 represented therefore not the beginning of a European cooperation but rather its expansion.

The 2002 Copenhagen Declaration has played an important role in the area of vocational education and training (VET). The Czech Republic has implemented or is implementing all the instruments of the Copenhagen Process, which seek to achieve better transparency of qualifications and to ease mobility of citizens and their lifelong learning: the EQF, the European Credit system for Vocational Education and Training (ECVET), the initiative European Quality Assurance for Vocational Education and Training (EQAVET) and Europass. The Czech Europass centre has been in operation since 2005 and has produced tens of thousands of documents - certificate supplements, Europass Mobility records, etc.

Entry into the EU entailed changes in the education programmes preparing students for regulated professions, *e.g.* architecture and medicine, in order for their diplomas to be recognised throughout the EU. Czech universities issue their graduates diploma supplements in the standard format recommended by the three international organisations, the EU, UNESCO and the Council of Europe.

The Lifelong Learning Programme 2007-2013 and other European education programmes are coordinated in the Czech Republic by the NAEP (National Agency for European Programmes) of the Ministry of Education.

Also important for the Czech Republic has been cooperation with the OECD, even before its entry into the organisation in 1995. The OECD, for example, has evaluated Czech tertiary education twice, in 1991 and then in 2005-2006. In 2003-2005 the Czech Republic participated in the OECD activity The Role of National Qualification Systems in Supporting Lifelong Learning. The opportunity to compare the various solutions to similar problems in other participating countries was inspirational. Participation in the project accelerated the process of developing the qualifications system and led to a Ministry of Education project realised with support from the ESF: Development of a National Register of Qualifications, Supporting the Integration of Initial and Continuing Education. The Czech Republic has recently participated in two activities of the OECD in the area of VET and lifelong learning. In 2006-2007 it participated in the project Recognition of Non-formal and Informal Learning (OECD RNFIL). In 2007-2010 it participated in OECD Reviews of Vocational Education and Learning - Learning for Jobs, on bridging the gap between VET and the needs of the labour market.

With its entry into the EU, the Czech Republic agreed to the Lisbon Strategy, and thus to the concept of lifelong learning. In 2007 the Czech government approved a policy document in this area for the period 2007 – 2015, titled *The Strategy of Lifelong Learning in the Czech Republic*.[13] All methods of learning, whether in traditional educational institutions or elsewhere, are considered as a unified whole, which allows

[13] http://www.msmt.cz/uploads/Zalezitosti_EU/strategie_2007_EN_web_jednostrany.pdf

transitions between education and employment and allows learners to gain the same qualifications and competences by different paths.

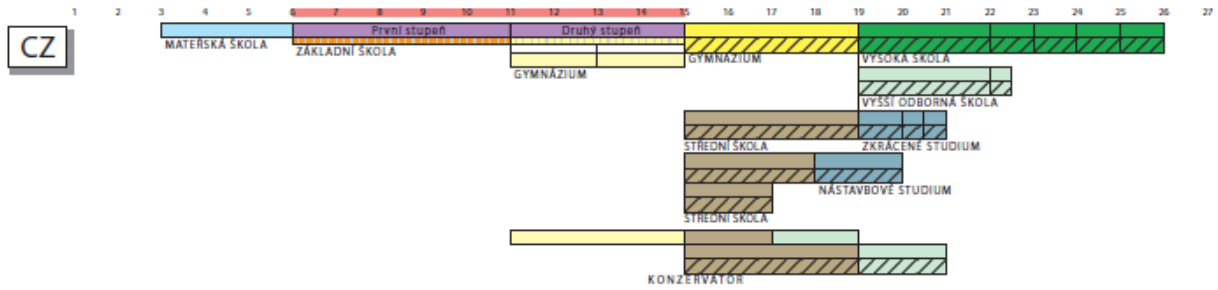
Lifelong learning can be divided into two phases, which we refer to as initial and continuing education.

Initial education includes:

- preschool education (pre-primary level – ISCED 0);
- primary and lower secondary education (ISCED levels 1 and 2), which is of a general nature and covers the period of compulsory education;
- upper secondary education (ISCED level 3), which can have a general or vocational character, and leads to a qualification with Maturita exam (ISCED 344, 354), with apprenticeship certificate (ISCED 353), or final exam (ISCED 353). Part of secondary education in the Czech Republic is supplemental study, for students who already have a secondary qualification with an apprentice certificate, which ends with a Maturita exam (ISCED level 354);
- tertiary education (ISCED levels 5,6, 7, 8), which includes a wide spectrum of programmes which generally require a Maturita exam. This includes education at institutions of higher education, vocational or general, and the later years of conservatories.

The initial education system of the Czech Republic includes nursery schools, primary schools, secondary schools (gymnazia and vocational upper secondary schools), conservatories and higher education institutions, vocational and non-vocational. The organisation of the initial education system in the Czech Republic is shown in the following diagram.

Fig. 2: The organisation of the initial education system in the Czech Republic



Pre-primary – ISCED 0 (for which the Ministry of Education is not responsible)	Pre-primary – ISCED 0 (for which the Ministry of Education is responsible)
Primary – ISCED 1	Single structure – ISCED 1 + ISCED 2 (no institutional distinction between ISCED 1 and 2)
Lower secondary general – ISCED 2 (including pre-vocational)	Lower secondary vocational – ISCED 2
Upper secondary general – ISCED 3	Upper secondary vocational – ISCED 3
Post-secondary non-tertiary – ISCED 4	
Tertiary education – ISCED 5A	Tertiary education – ISCED 5B
Allocation to the ISCED levels: ISCED 0	ISCED 1 ISCED 2
Compulsory full-time education	Compulsory part-time education
Part-time or combined school and workplace courses	Additional year
-/n/- Compulsory work experience + its duration	>> Study abroad

Source: Eurydice.

Continuing education starts with the completion of intial education and the entry into the labour market. Continuing education can be directed to a diverse spectrum of knowledge, skills and competences for use in professional, civic or personal life. This is described further in Section 2.4.

2.1 Primary and lower secondary education

Primary and lower secondary education follows on from preschool education and learning in the home. It is the only stage of education which is obligatory for all students. It consists of two organisationally and didactically connected levels (single structure/basic education).

School is compulsory for 9 years. Students of compulsory school age (6-15) mainly attend primary and lower secondary schools. Primary education comprises years 1-5 corresponding to ISCED level 1 and lower secondary comprises years 6-9, corresponding to ISCED level 2. Students who are interested may apply to study at certain gymnazia or conservatories, starting in years 6 or 8. On successful completion of compulsory education, primary and lower secondary, students attain ISCED level 244.

Nearly all students attend public primary and lower secondary schools. Two percent attend private or denominational schools.

Students with special educational needs may be integrated into regular classes. Depending on the degree of impairment, students may attend schools specifically for students with special needs, or classes with special educational programmes. Students with severe mental impairments, with multiple impairments, or with autism have the right to education in special schools, if they are not educated elsewhere. On completion of these programmes, the students attain ISCED level 244.

In the school year 2014/2015 there were 4078 combined primary/lower secondary schools and 1328 upper secondary schools in the Czech Republic.

Elementary and lower secondary schools are usually run by municipalities.

2.2 Upper secondary education

Upper secondary education further develops the knowledge, skills and competences gained in primary and lower secondary, which are important for the personal development of each individual. It provides students with a broad general education or with a vocational education combined with general education.

96% of fifteen-year-olds continue on to upper secondary education.

Upper secondary education forms the foundation for personal and civic life, independent study and lifelong learning, and preparation for further study or for employment.

Majority of upper secondary schools are public. In 2014/2015, 14% of students attended private schools and 2% attended denominational schools.

The organisation and course of education in upper secondary schools is governed by the regulation 13/2005 Sb., on Upper Secondary Education and Education in Conservatories, as amended. Education in upper secondary schools takes place in day, evening, distance, electronic and combined forms. Students are admitted to upper secondary education after successful completion of lower secondary education. Admission of students to each upper secondary school is at the discretion of the head teacher.

On successful completion of the educational programme of an upper secondary school, the student may attain one of the following three levels.

- **Upper Secondary Education**

An upper secondary qualification is awarded on completion of a 1 or 2 year programme. These educational programmes are intended primarily for students who failed to complete lower secondary education and for graduates of special lower secondary education. An upper secondary programme is primarily practically oriented. These lead to qualifications at ISCED level 253 (classification code C, one- or two-year practical schools) or 353 (classification code J). These programmes are normally taught at vocational secondary schools.

- **Upper Secondary Education with Apprenticeship Certificate**

This qualification is awarded to students on successful completion of a 2 or 3 year educational programme. The programmes are vocational and prepare the student for direct entry into the labour market. Graduates attain ISCED level 353 (categories E and H). These programmes are normally taught at vocational secondary schools.

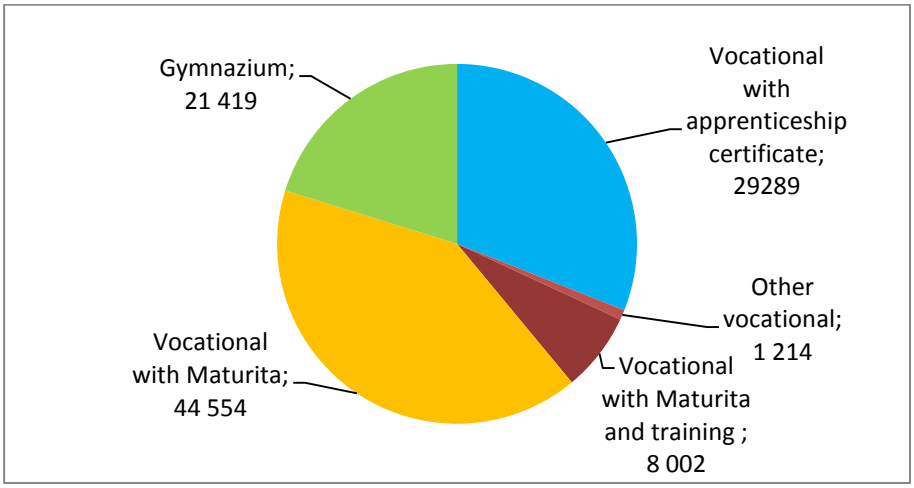
- **Upper Secondary Education with Maturita Exam**

An upper secondary qualification with a Maturita exam is awarded on successful completion of a 4 year programme. Graduates attain ISCED level 344 or 354 (categories K, L, M) and may apply to continue their studies at a tertiary institution. Graduates are also prepared for direct entry into the labour market.

Table 2: Students in the first year of full time study in upper secondary education in the academic year 2014-2015

Special upper secondary education (categories C, J)	1 214	1.3 %
Upper secondary with an Apprenticeship Certificate (categories E, H)	29 289	33.3 %
Upper secondary with Maturita (vocational) (categories L, M)	44 554	46.2%
Upper secondary with Maturita (general) (category K)	21 419	22.2 %
TOTAL	96 476	100 %

Fig. 3: Graph showing proportions of students in the first year of full time upper secondary education by type of programme for the academic year 2014/2015



2.2.1 General secondary education

Teaching in four year gymnazia and in the last four years of six or eight year gymnazia, which leads to an upper secondary qualification with Maturita, takes place according to two programmes, that for regular gymnazia and that for sports gymnazia. The primary purpose of the gymnazium is to prepare students for tertiary education.

The international classification ISCED 2011 distinguishes between lower secondary and general upper secondary education.

Lower secondary can take place in the lower years of gymnazia with six or eight year programmes (general education) or in the four lower years of the eight year dance

conservatory (artistic education). However, the majority of students obtain their lower secondary education within the second grade of the basic school (ISCED 2)).

General upper secondary education is normally provided by **gymnazia**, either in four year gymnazia or in the last four years of six or eight year gymnazia. Four year gymnazia provide qualifications at ISCED level 354 (upper secondary with Maturita, category K). Six or eight year gymnazia provide both lower and upper secondary education, two years of lower secondary in the case of six year gymnazia and the full four years in the case of eight year gymnazia. This lower level corresponds to the ISCED level 244 and the pupils obtain their compulsory education here.

2.2.2 Vocational secondary education

Vocational upper secondary programmes leading to a qualification **with Maturita** are professionally oriented and primarily taught in vocational secondary schools. Secondary education programmes with Maturita (ISCED level 344) offer graduates a qualification for employment directly from school or the option of continuing in tertiary education. Aside from the vocational component, programmes with Maturita contain a general education component, forming roughly 60% of the course content.[14]

Programmes leading to a qualification **with apprenticeship certificate** are more practically oriented and have a smaller general education component (in three year programmes 34%, in two year programmes 30%, for programmes for students with special needs around 20%). Part of these programmes is vocational training, which takes place in school workshops, or, in second and third year, usually in a real workplace environment.

Education in upper secondary programmes with an Apprenticeship Certificate ends with a **final examination** in which students demonstrate that they are prepared for relevant work activities.

Conservatories provide a professional artistic education in the fields of music, dance, or drama. This education takes place in two types of programmes, six year (after the completion of lower secondary education) or eight year in the dance conservatory (which begins after the fifth year of primary school). Graduates of both types of programmes obtain higher professional qualifications at ISCED level 550, which permit further study only in artistic programmes at tertiary institutions, or qualifications at level 354, which permit entry to any tertiary programme. The last two years of conservatory are considered to be tertiary education. The first four years of the eight year programme, by contrast, are considered lower secondary education and form part of compulsory education. Study at conservatory is reserved for highly talented students in music, dance or performing arts.

[14] The lyceum curricula has a larger general education component (77%). The specialised component serves mainly to prepare students for tertiary study in the corresponding field, *e.g.* technical, scientific, education or health.

2.3 Higher education

Tertiary education is usually understood to include all formal postsecondary education which requires a Maturita exam. This corresponds to ISCED levels 5, 6, 7, 8. By this definition, higher education in the Czech Republic includes tertiary vocational institutions, which award qualifications at ISCED level 6, 7, 8 or in the final two years at conservatories (ISCED level 5)..

2.3.1 Higher education (excluding tertiary vocational)

Higher education, with the exception of tertiary vocational education, is governed by the act 111/1998 Sb., on Higher Education Institutions. This act introduced a three stage progression for tertiary education: with bachelor's, master's, and doctoral programmes. Entry into these programmes is conditional on passing the Maturita exam and entrance exams. The offering of programmes of study is subject to approval, which is given by the Ministry of Education on the basis of the reports of the Accreditation Commission. Study can be either conventional or distance learning. Study is completed by a state examination. For bachelor's programmes this normally includes the defence of written thesis, and for master's or doctoral degrees the defence of a master's thesis, resp. dissertation.

Higher education institutions (excluding tertiary vocational)

These institutions are by law the highest elements of the educational system and are the main centres of independent research and creative endeavour. Their role is to preserve and expand knowledge, to provide students with appropriate professional qualifications, prepare them for future research, participate in lifelong learning, contribute to the development of civil society, and develop international and especially European cooperation as a substantial part of all their activities. These institutions achieve this by combining teaching and research, whether scientific, or artistic.

Non-vocational higher education institutions in the Czech Republic are of three types: public, ministerial (state) and private.

The number of non-vocational higher education institutions in the Czech Republic has increased significantly in the last few years. In 2015 there were 26 public, 43 private and two state institutions of this type. To ensure that increasing quantity is accompanied by quality, the Ministry of Education intends to tighten oversight of schools and criteria for approval of new programmes.

Public institutions are established by law and are legal entities *sui generis*. They are self-governing bodies and own property which is given to them by the state. Their institutions of self-government are the academic senate (elected by the academic community, and including student representatives), the rector, the scientific or artistic council and the disciplinary commission. An additional body is the administrative council, named by the minister of Education, which oversees financial matters, especially those relating to real property. A similar structure is present in each faculty, headed by a dean.

Ministerial (state) higher education institutions, military and police, are subject to the same law, but are the responsibility of the Ministry of Defence, respectivelythe Ministry of the Interior, and are run as part of the state administration. They have the same institutions of self-government as their public counterparts. Rectors of public and state institutions are appointed by the President of the Republic and serve for at most two four year terms. Rectors are elected by their institutions' academic senates.

Private institutions of higher education are a relatively recent addition to the system, made possible by the act on Higher Education Institutions of 1998. To establish such an institution, a legal person must obtain the approval of the Ministry of Education. The conditions for approval are set out in §39 of the act. The act does not specify any particular organisational structure. Usually they are headed by a rector.

Public and ministerial (state) institutions are financed from the national budget, while private institutions obtain their funding from other sources, primarily from fees. Similar to public institutions, they may apply for public funding under certain circumstances.

The act distinguishes between two types of institutions, a university and non-university type. A university type of higher education institution can offer programmes of all three types, bachelor's, master's, and doctoral. A non-university type of higher education institution offer mainly bachelor's programmes, but may offer master's programmes if they have approval. They may not, however, offer doctoral programmes. All programmes must be approved by the Accreditation Commission. Universities may be divided into faculties.

A full list of non-vocational higher education institutions is available from http://www.msmt.cz/odkazy/servery-verejnych-statnich-a-soukromych-vysokych-skol

Non-vocational higher education institutions employ academic staff at the following levels: professors (profesor), readers (docent) senior lecturers (odborný asistent), lecturers (asistent), adjuncts (lektor) and research assistants (vědecký, výzkumný a vývojový pracovník). Readers are appointed by the rector after a habilitation process, which includes the submission and defence of a habilitation thesis. Professors are appointed by the President of the Republic after a promotion procedure. The right of institutions to conduct habilitation and professorial promotion procedures is subject to approval.

Quality assurance in higher education is further described in Section 3.5.

2.3.2 Tertiary vocational education

Vocational higher education takes place primarily in tertiary vocational schools (ISCED level 6), but also in the final two years at conservatories (ISCED level 5).

Tertiary vocational schools began to appear in the early 1990's to provide vocational non-university tertiary education. They acquired a legal framework with the act 561/2004 Sb. They do not have the same legal status as other higher education

institutions, but they have many common features. Entry is conditional on passing the Maturita exam and entrance exams. Programmes of study last three or three and a half years and are subject to approval. This is granted by the Ministry of Education on the recommendation of the Accreditation Commission for Vocation Tertiary Education (AK VOV). Forms of study include full time, evening, distance, electronic or combinations of these. The organisation of studies, regulated by the regulation 10/2005 Sb., is similar to that at other higher education institutions, including lectures, assignments and tutorials, but with a large component of long term practical training. Studies are completed by an "absolutorium", including examinations in vocational subjects, a foreign language examination, and the defence of a thesis. Graduates receive a title "diplomovaný specialista“ (DiS). Nearly half of such institutions use the European Credit Transfer System (ECTS).

The legal status of these institutions differs from those of other higher education institutions. They may be established by regional governments, ministries, (Defence, Interior), private individuals, or religious institutions. In contrast with public non-vocational higher education institutions, tertiary vocational schools have no self-government and are subject to different financial controls. They are headed by a director. Qualifications for teachers are set out in the act 563/2004 Sb., on Pedagogical Staff.

The fields covered by these institutions are quite varied, with a concentration in Business, Health, and Social Work.

Graduates of these programmes are not permitted to continue on to a master's degree unless they first obtain a bachelor's degree from a non-vocational institution. The law does, however, allow non-vocational higher education institutions to adopt special entrance requirements for bachelor's programmes for such students and to recognise a part of their studies. Graduates of vocational institutions may therefore complete a bachelor's degree faster than other students.

Quality assurance in vocational higher education is further described in Section 3.5.

2.4 Continuing education

Continuing education is not disconnected from the rest of the education system, but rather is closely tied to it, and refers to the levels of initial education. The main reason for the increasing importance of continuing education is the need for learners to acquire new knowledge and skills to meet new conditions. The precise meaning of the term is, however, very difficult to define. One of the possible definitions is given in the Strategy for Lifelong Learning, that “continuing education is learning which happens after the attainment of a particular qualification level, or after entry into the labour market”, although this sometimes overlaps with initial education. A different possibility is the negative definition of §2 of the act 179/2006 Sb. on the VNFIL, where continuing education consists of all education which is not initial education. According

to this definition anyone can begin continuing education after the end of initial education and can continue for the remainder of his or her life.

The ESF project Koncept was conducted by NÚOV/NÚV during the period 2009-2012. It aimed at continuing education and its goal as the proposal of ideas for the reform of continuing education. One goal was to provide the public with sufficient reliable information, advising services and a wide variety of courses which meet the needs of the labour market.

Courses or educational programmes in continuing education can be divided in the following categories.

Types of continuing education programmes

- **Retraining courses** – The Ministry of Education has the responsibility under the act 435/2004 Sb., on Employment, to evaluate and approve proposals for retraining courses. Once all formal conditions have been satisfied, approval is given to conduct retraining courses. For improved quality, retraining courses were linked with qualifications in the NSK.

- **Approved courses** (other than retraining). Approval for programmes of study is given by the relevant ministries:
    a) Continuing education for educational staff (Ministry of Education, Youth and Sports),
    b) Continuing education for civil servants and local and regional government (Ministry of the Interior),
    c) Continuing education of medical staff (Ministry of Health),
    d) Continuing education of social workers (Ministry of Labour and Social Affairs),
    e) Continuing education in the area of Sport (Ministry of Education, Youth and Sports)
- **Education required by regulations** - these regulations were formerly used in fields where employment in certain occupations required a demonstrated understanding of certain norms. This was done because it was necessary to ensure proper expertise, *e.g.* for electricians, or for the safety of workers, *e.g.* in construction.

In continuing education the referencing process applies only to qualifications awarded under the act 179/2006.

- **Continuing education programmes of public tertiary institutions** - in the course of their educational activities, these institutions offer, either free of charge or for a fee, lifelong learning programmes oriented towards work or personal interest. The institutions give participants in these programmes a certification on completion of the programme. These institutions also offer, either free of charge or for a fee, internationally recognised courses for upgrading skills.

Programmes of the types mentioned above do not award qualifications in the sense of the Recommendation and are therefore not assigned EQF levels.

Implementation of the act 179/2006, on the VNFIL began in 2007. A key instrument in its realisation is the National Register of Qualifications (NSK), which contains all vocational and complete vocational qualifications recognised in the Czech Republic.

In parallel with the development of the NSK, under the direction of the Ministry of Education, the Ministry of Labour and Social Work is developing a **National System of Occupations (NSP)**, a list of all types of job in the Czech Republic. The NSP records the requirements for individual professions in the labour market. This creates a publicly available database of professions accurately reflecting the situation in the labour market. Together with the National Register of Qualifications (NSK) it provides important information about qualifications requirements, which are reflected in all levels of education.
The NSP is meant to replace the Integrated System of Standard Positions (ISTP), an information system for the labour market, available at http://www.istp.cz/.

The National System of Occupations is becoming an important source of information in the areas of Human Resources and vocational education at all levels. It significantly strengthens the role of employers in vocational education and will provide a foundation for mobility and labour market mobility in the European Union.

The NSK distinguishes between two types of qualification:

- complete vocational qualifications - ability to work in a particular occupation,
- vocational qualifications - the ability to perform particular activities or groups of activities which lead to employability in the labour market. Vocational qualifications can be part of complete vocational qualifications.

Complete vocational and vocational qualifications

The procedures for awarding of vocational and complete vocational qualifications are specified by law. Each vocational qualification is described by a pair of standards, a qualification standard (a list of expected learning outcomes) and an assessment standard (set of evaluation criteria):

- Qualification standard (kvalifikační standard) - a description of the skills required for a specific work activity or activities in a particular occupation. These are the skills which are required for the relevant vocational qualification.
- Assessment standard (hodnoticí standard) - a list of criteria and procedures for validating the skills required in a particular occupation. It describes how to verify that the candidate possesses the skills required for the qualification.

Qualification and assessment standards

As of December 2015, 921 vocational qualifications have been approved for inclusion in the NSK and approximately 134 000 people had successfully completed examination.

Sector councils participate in the formulation of these standards. These councils include:

- representatives of major employers in the sector,
- representatives of professional organisations and guilds
- representatives of ministries,
- educators,
- representatives of the National Institute for Education,
- representatives of a consulting firm.

The standards are published at www.narodni-kvalifikace.cz.

3. Fulfilment of the referencing criteria

3.1 Criterion 1 - Clearly defined responsibilities of the relevant institutions

The responsibilities and/or legal competences of all relevant national bodies involved in the referencing process, including the National Coordination Point, are clearly determined and published by the competent public authorities.

The referencing of national qualifications to the EQF is the responsibility of the Ministry of Education, which, according to the act 2/1969 Sb., on the Establishment of Ministries and Other Institutions of Central Government of the Czech Republic, is the competent institution.

3.1.1 Direction of the referencing process

Ministry of Education, Youth and Sports

The Ministry of Education is a ministry of the Czech state, headed by a cabinet minister. The area of responsibility of the Ministry is described by the act 2/1969 Sb., on the Establishment of Ministries and Other Institutions of Central Government of the Czech Republic, as amended.

§7, devoted to the Ministry of Education, Youth, and Sports, reads:

(1)The Ministry of Education, Youth and Sports is the institution of central government with responsibility for nursery schools, primary and secondary schools, institutions of higher education, for research policy, research and development including international cooperation, academic titles, state care of children, for youth, physical education, sport, hiking, and the representation of the republic in international sport.

(2) The Ministry of Education, Youth and Sports coordinates the activities of other ministries and institutions of government and professional bodies in the area of recognition of professional qualifications according to the act 18/2004 Sb. on the Recognition of Professional Qualifications of Citizens of other EU Member States and in the area of the awarding of qualifications in continuing education according to the act 179/2006 Sb., on the Verification and Recognition of the Further Education Results.

Timetable of the referencing process

In August 2010 the Ministry of Education approved a timetable for the referencing process[15], in which the procedure is detailed, including tasks for the relevant bodies. It includes, in addition to the timetable itself, a discussion of the purpose of the process and its importance. Each task is assigned to the relevant department and the procedure for approval of the referencing process is set out. It lists the important stakeholders who must be involved in the writing of the referencing report, creates the editorial board and describes the process for approval of the report. The draft

[15] *Přiřazování úrovní kvalifikací v ČR k úrovním Evropského rámce kvalifikací – Harmonogram prací [Referencing Czech qualification levels to the EQF – Timetable]* (MŠMT, NÚOV, September 2010, ref. no.: 20663/2010-24), only available in Czech.

report was presented at a conference on the referencing process in March 2011 and, after incorporation of comments from international experts and domestic reviewers, was presented for approval by the Ministry of Education and the National Council for Qualifications. It was then submitted for approval to the Czech cabinet in July 2011.

National Coordination Point for the EQF in the Czech Republic (NCP CZ)

The referencing process is implemented by the National Coordination Point for the EQF in the Czech Republic (NCP CZ)

National Coordination Points were established in the member states in response to the Recommendation for the Establishment of the EQF to support and, in conjunction with other relevant national authorities, guide the relationship between national qualifications systems and the EQF with a view to promoting the quality and transparency of that relationship.

This mission involves the following tasks, listed in the Recommendation:

a. referencing levels of qualifications within national qualifications systems to EQF levels,

b. ensuring that a transparent methodology is used to facilitate comparisons and that resulting decisions are published,

c. providing access to information and guidance to stakeholders, on how national qualifications relate to the EQF through national qualifications systems, and

d. promoting the participation of all relevant stakeholders including higher and vocational education institutions, social partners, and experts in the use of qualifications at the European level.

The National Coordination Point for the EQF in the Czech Republic was established at the National Institute of Technical and Vocational Education (NÚOV), now National Institute for Education (NÚV), on the basis of a proposal approved by the Ministry of Education.[16]

The NCP CZ has been fully functional since the beginning of 2009 and has the following structure:

[16] *Návrh na zřízeni Koordinačního centra EQF* (PV MŠMT 31.7.2009, č.j.: 10104/2008-2/NÚOV) (*Proposal on the establishment of the EQF Czech Coordination Point* – only available in Czech)

1. NÚV NCP Working Group

The working group's responsibility is to coordinate the activities of the NCP CZ and to create an environment supporting its domestic and international activities.

NÚV NCP Working Group:

- receives and analyses materials from the European Commission and the EQF Advisory Group,
- provides information and organisational support for the other two groups,
- communicates with other affected national organisations, particularly the Ministry of Education,
- cooperates with the National Europass Centre, Czech Republic,
- communicates with foreign organisations, especially the European Commission and Cedefop,
- translates selected foreign publications relating to the EQF into Czech,
- prepares and disseminates publications relating to the EQF,
- monitors and supports the quality and transparency of activities and publications of the NCP.

2. Advisory Group

The work of this group is consultation and advise, which contributes to the publications of the NCP CZ.

The Advisory Group:

- provides consultation on important issues related to the activities of the NCP,
- evaluates the recommendations of the NCP CZ and their possible impact on target groups,
- evaluates strategic and procedural materials relating to further development of the NSK,
- contributes to the dissemination of information on qualifications systems including the NSK and on the activities of the NCP CZ,
- contributes to harmonisation of procedures in issues of qualifications, among sectors and with qualifications in tertiary education,
- monitors the quality, the procedures and outputs of the NCP CZ,
- participates individually in the implementation of national and international projects in the area of qualifications.

3. National Council for Qualifications EQF Implementation Working Group

The purpose of the Working Group is to discuss issues related to the EQF and its relation to the Czech vocational qualifications system and to present its conclusions to the National Council for Qualifications.[17] For a list of institutions represented, see Appendix I.

Information on the activities of the NCP and the referencing process is published on the website of the Ministry of Education http://www.msmt.cz/vzdelavani/dalsi-

[17] The National Council for Qualifications was set up under § 24 of the act 179/2006 Sb. and Order no. 10/2007 of the Minister of Education (ref. no.: 206/2007-20).

vzdelavani/european-qualification-framework-evropsky-ramec-kvalifikaci and NÚV http://www.nuv.cz/bloky-titulka/zvyraznena-aktualita-en/a4.

3.1.2 Involvement of other institutions

The responsibilities of other agencies and ministries in the recognition of qualifications are defined by §3, par. 3 of the act 561/2004 Sb., (the Education Act) and §24 of the act 179/2006 Sb., on the VNFIL.

The participation of the Czech School Inspectorate is governed by §12, par. 1-3 of the act 561/2004 and relates to the evaluation of schools.

The activities of the accreditation commissions for higher education are governed by §104-107 of the Education Act and §83-85 of the Higher Education Act.

3.2 Criterion 2 - Clear and demonstrable link between EQF levels and national qualification levels

There is a clear and demonstrable link between the qualification levels in the national qualifications framework or system and the level descriptors of the EQF.

Sections 3.2.1, 3.2.2 a 3.2.3 describe and partially explain the results of the Czech referencing process. A more detailed explanation of the referencing of Czech qualifications levels to EQF levels is found in Appendix III.

3.2.1 Referencing of qualification levels awarded in primary and secondary education

Table 3: Referencing of qualification levels awarded in primary and secondary education in the Czech Republic to EQF levels:

EQF	Level of primary or secondary education	Category (see Subsection 3.4.1)
4	Upper Secondary with Maturita (4 years)	K, L, M
3	Upper Secondary with Apprenticeship Certificate (3 years)	H, E
2	Upper Secondary with Apprenticeship Certificate (2 years) Upper Secondary Lower Secondary	E J C
1	Special Education	B

The starting point for the referencing of qualification levels awarded in primary and secondary education to EQF levels is the expected learning outcomes listed in the national core curricula, published by the Ministry of Education for each programme type.

A comparison was made of the expected learning outcomes listed in the core curriculum with EQF level descriptors for levels 1-4 in order to verify the linking of qualifications awarded in primary and secondary education to the EQF.

This comparison showed that the curricula and EQF descriptors are generally in agreement. Qualification levels are defined in terms of learning outcomes. The learning process is interpreted in a comprehensive sense, to include knowledge and skills in the cognitive, physical and social domains. This knowledge and these skills are not considered in isolation, but are combined into more general competences. The linking of particular learning outcomes to EQF levels demonstrates clear and significant similarities. A comparative analysis may be found in Appendix III.1.

3.2.2 Referencing of qualification levels awarded in tertiary education

The characteristics of the different levels of tertiary education in the Czech Republic are set out in the relevant legislation. These characteristics described broadly and vaguely, can be compared to the descriptors of the EQF and the Qualifications Framework for Qualifications of the European Higher Education Area (QF-EHEA). This forms the basis for the proposed referencing, taking into account that EQF levels 6-8 and EHEA cycles 1-3 are compatible.[18]

The proposal of the National Qualifications Framework for the Tertiary Education was developed within the project Q-RAM, nevertheless it is not yet underpinned by the legislation. The Czech Republic thus has not finished the process leading to the compatibility of the national framework with the QF EHEA, which means that Bologna self-certification has not been completed yet. The final column in the table below represents the project Q-Ram's proposed referencing.

Table 4: Referencing of qualification levels awarded in tertiary education

Level or degree/type of tertiary programme	**EQF level**	**Cycle in the QF-EHEA and number of credits**
Tertiary Vocational Education Three or three and a half years **180 ECTS** credits Graduates receive the title ***"diplomovaný specialista"*** (DiS.) This qualification does not allow direct continuation to Master's programmes	**6**	

[18] The London Communiqué: *Towards the European Higher Education Area: responding to challenges in a globalised world,* 18 May 2007.
http://www.ehea.info/Uploads/Declarations/London_Communique18May2007.pdf

Bachelor's programmes 3-4 years of study **180-240 ECTS** credits Graduates are awarded the titles of ***Bachelor*** ("Bc") or ***Bachelor of Arts*** ("BcA")		**1** **Typically** **180-240 ECTS**
Master's programmes 1-3 years of study beyond Bachelor's **60-180 ECTS** credits or 4-6 years of tertiary education ("long Master's programme") **240-360 ECTS** credits Graduates are awarded the titles of ***Engineer*** "Ing." for degrees in Business, Economics, Engineering, Agriculture, Forestry, or Military Studies; or ***Architectural Engineer*** (Ing. arch.) for degrees in Architecture; or ***Master of Arts*** (MgA.) for degrees in the Arts; or ***Master*** (Mgr.) for all other subjects except Medicine, Dentistry, Veterinary Medicine and Hygiene.		**2** **Typically** **90 – 120 ECTS**
Doctor of Medicine (MUDr.) in Medicine, ***Doctor of Dentistry*** (MDDr.) in Dentistry, ***Doctor of Veterinary Medicine*** (MVDr.) in Veterinary Medicine On completion of a state examination (státní rigorózní zkouška): ***Doctor of Law*** (JUDr.) in Law ***Doctor of Philosophy*** (PhDr.) in the Humanities, Education and Social Sciences ***Doctor of Natural Science*** (RNDr.) in the Natural Sciences ***Doctor of Pharmacy*** (PharmDr.) in Pharmacy. ***Licentiate in Theology*** (ThLic.) in Catholic Theology ***Doctor of Theology*** (ThDr.) in other areas of Theology	**7**	**(a minimum of 60 at 2nd-cycle level)**
Doctoral programmes 3-4 years of study Graduates are awarded the titles of ***Doctor*** (Ph.D.) or ***Doctor of Theology*** (Th.D.)	**8**	**3** **3-4 years of study**

This comparison of the five types of qualifications awarded in the Czech higher education system, as described in the relevant legislation, with the descriptors of the two European systems showed that the European frameworks have a broader range of requirements than are mandated in the Czech legislation. Some requirements

(communication, formulating judgments, and preparation for continuing education) are entirely absent and others are formulated briefly and vaguely. These aspects are however found in particular learning outcomes of programme descriptions (Graduate Profiles).

3.2.3 Referencing of qualification levels awarded in accordance with the act on the VNFIL

The qualifications levels of the NSK form an eight level scale and are shared with the National System of Occupations (NSP)

Each qualification which can be awarded under the act 179/2006, on the VNFIL, *i.e.* qualifications awarded outside of initial education, is listed as a vocational qualification in the NSK (the National Register of Qualifications) and has a qualification level described by competences.

The level descriptors of the NSK were developed in close connection with the eight levels of the EQF. They describe the activities required at each level for employment. Despite formal differences, a comparison of the level descriptors of the NSK to those of the EQF showed that the eight qualification levels of the NSK correspond well to those of the EQF. For more details see Appendix III. 3.

3.3 Criterion 3 - The principle of learning outcomes

The national qualifications framework or system and its qualifications are based on the principle and objective of learning outcomes and linked to arrangements for validation of non-formal and informal learning and, where these exist, to credit systems.

3.3.1 Role of learning outcomes in the Czech educational system

The term learning outcomes do not have a uniform interpretation across levels of the Czech educational system. There is not even an agreed translation of the term. Nevertheless, all the translations in current use mean the same thing: what a student should know, should understand and should be able to do at the end of an educational programme.

There is a similarity in the understanding of learning outcomes in pre-primary through secondary education, though there are some differences at the lower levels. These differences reflect the different age groups of the students and the different character of the educational process.

Learning outcomes for all levels below tertiary are set out in national core curricula. These were introduced into the Czech educational system by the Education Act in 2015the Education Act) and have been gradually implemented since 2006. The ideological starting point of the core curricula is pedagogical constructivism. The core curricula emphasise active teaching and turn their attention to students. They also provide space for additional development by individual schools to cater to the needs of their students.

Core curricula set out learning outcomes which students should attain by the end of the corresponding level of education. These learning outcomes are formulated actively, *e.g.* a student should “demonstrate a familiarity with current international issues”. In addition to learning outcomes the core curricula list content necessary for their attainment. Core curricula establish a clear hierarchy between knowledge and skills. By knowledge is meant a system of facts and theories which students acquire by being taught. Knowledge forms the foundation of education. By skills is meant the ability to perform certain tasks. For many skills appropriate knowledge is a prerequisite. Nonetheless, the core curricula implicitly place skills above knowledge and treat the two categories as relatively autonomous, which gives the impression that skills can exist without knowledge. This impression is strengthened by the fact that learning outcomes are formulated in terms of skills and the relation between the two categories is not made explicit in the core curricula.

The orientation towards skills is further strengthened by the notion of key competences. These are defined as collections of knowledge, skills, attitudes and values which are necessary for personal development and are useful in common situations. The *Key Competences Handbook* states that "Acquisition of a competence means that the student is equipped with a complex collection of knowledge, skills and attitudes, in which everything is connected in such a way that he or she can carry out tasks and manage situations in studies, work and personal life. Acquisition of a competence means that one can orient oneself in normal situations and react appropriately."

The core curriculum for primary and lower secondary education recognises six core competences: learning, problem solving, communication, social and interpersonal interaction, civic involvement and work skills. In secondary school these are complemented by entrepreneurship (in gymnazia); and preparation for work and business, mathematical literacy, and information and computing technology (in vocational education). These competences are not tied to particular subjects, but rather represent general goals of the educational process. Their acquisition occurs mainly through interdisciplinary links, which are emphasised in the core curricula.

The learning outcomes listed in the core curricula are difficult to reconcile with evaluation of students, and resist detailed and systematic categorisation. For this reason additional standards are being prepared. Discussions are on-going as to whether these should be normative or evaluation standards and whether the learning outcomes should be minimal requirements or desired outcomes. This question is fundamental, because normative standards can include all types of knowledge and competences, while evaluation standards include only those outcomes which are testable. The standards could therefore result in ideological incongruence with core curricula.

Learning outcomes in tertiary education are used in a different sense. Distinctions are made among professional knowledge, professional skills and general competences. Knowledge and skills are tied to a particular subject, while competences are of a more

general character. Knowledge and skills are explicitly tied. By skills one means the use of theoretical and factual knowledge in the given field. Skills without knowledge are therefore impossible, in contrast to the interpretation in the core curricula. The use of professional knowledge and skills in a particular context, subject to the degree of autonomy and responsibility, is described as competence. Competences include judgment, communicative ability, including in foreign languages, preparation for continuing learning, etc.

The interpretation of learning outcomes described above is not yet universal in tertiary education. However, this is changing. The rules of the Accreditation Commission require non-vocational tertiary institutions to describe their programmes in terms of general characteristics and in terms of programme descriptions (Graduate Profiles). The Commission in its *Standards for the Assessment of Applications for Accreditation, Broadening an Accreditation and Extending the Validity of Accreditation of Study Programmes and Study Fields*,[19] last updated in 2015, recommends the division of the learning outcomes in of programme descriptions (Graduate Profiles) and programme goals into knowledge, skills and competences. The National Qualifications Framework for Tertiary Education, which is currently being pilot tested for certain fields in particular tertiary institutions, works with the categories knowledge, skills and competences. It is intended that after testing and implementation the National Qualifications Framework for Tertiary Education can be used in the accreditation process. One subject of controversy is whether the narrower professional learning outcomes will compromise the educational culture.

3.3.2 Primary and secondary education

Qualifications in primary and secondary education were referenced to the EQF based on a comparison between the learning outcomes described in curricular documents which have been legally mandated since 2004 and gradually being implemented in practice.

Core curricula represent a new point of view on education, which emphasises key competences, their connection with the educational system and use in practical experience. The expected learning outcomes are formulated actively, *i.e.* they specify what tasks the student should be capable of, and are aimed at practical situations in everyday life. The core curricula for vocational education are based on the competences defined in the NSK.

The current Czech core curricula in primary and secondary education support learning directed towards competences and define its goals by learning outcomes formulated in terms of activities. This emphasis on competences, which include attitudes and knowledge with the ability to apply it, is completely in accord with the EQF. This emphasis also supports the possibility of combining learning outcomes with those from informal and non-formal learning.

[19] See http://www.akreditacnikomise.cz/en/

The secondary education system does not currently use a credit system. Nevertheless, the Czech Republic has agreed to the Recommendation of the European Parliament and Council of 18 June 2009, on the Establishment of the European Credit system for Vocation Education and Training (ECVET). This has been undergoing testing since 2009. The Czech Republic is participating in two pilot programmes, CREDCHEM and RECOMFOR. Meanwhile an analysis was prepared of the implementability of the ECVET system in the Czech Republic. On the basis of this analysis and experience with the pilot projects, a proposal for ECVET implementation in the Czech Republic was drafted and approved in 2012.

3.3.3 Higher education

The required components of programmes of study are set out in §44-47 of the act on Higher Education Institutions. The act describes briefly the characteristics of bachelor's, master's and doctoral programmes. These characteristics are useful mainly as a gauge for determining whether the programme of study is at the level claimed.

The regulation 42/1999 Sb., on the Content of Applications for the Approval of Programmes of Study[20] defines the documentary requirements for approval of programmes and some of the terms used in the Higher Education Act. In addition, the Accreditation Commission prepared and published a *Procedural Manual for Preparing Proposals for the Approval of Bachelor's, Master's and Doctoral Programmes* in 2002, updated in 2009, and *Standards for the Assessment of Applications for Accreditation, Broadening an Accreditation and Extending the Validity of Accreditation of Study Programmes and Study Fields.*

On the basis of an analysis of these regulations, it appears that the requirements for approval of programmes of study are based on learning outcomes, particularly in the sections programme description (Graduate Profile) and Goals of Education, divided into knowledge, skills and competences. In practice, the sections Graduate Profile and Goals of Education are not mandatory, but are recommended.

An analysis was made of accreditation requirements, educational objectives, the programme descriptions and employability. Although the quality of materials differs from institution to institution and from field to field, these are generally descriptions in terms of learning outcomes. This is especially the case for approval of new programmes of study by the Accreditation Commission. Some institutions already base ECTS credits on learning outcomes, as recommended by the *ECTS Users' Guide 2009*. In 2009 and 2010 three Czech higher education institutions were awarded the ECTS label.

The non-vocational tertiary education system uses a credit system, and the tertiary vocational system uses one partially. When preparing the *National Report on the*

Tertiary institutions use credit systems, in most cases the ECTS.

20 http://www.akreditacnikomise.cz/attachments/235_EN_42_decree_%20study_programme_accreditation.pdf

Implementation of the Bologna Process (2008)[21], almost all public non-vocational higher education institutions indicated that they had implemented the ECTS at the bachelor's and master's level. A number of institutions indicated that the ECTS is used for all students who matriculated in the academic year 2006/2007. Where the institutions introduced a credit system different from the ECTS, these systems were, in the majority of cases, compatible with the ECTS. Institutions have in this case prepared conversion systems.

The normal time to graduation specified in the Higher Education Act for bachelor's and master's programmes agrees with the QF-EHEA (see Tab. 4). Their conversion to ECTS credits is simple because one academic year of study corresponds to 60 ECTS credits.

The National Qualifications Framework for Tertiary Education in the Czech Republic exists nowadays as a proposal that was developed and implemented within the Q-Ram project.

3.3.4 Continuing education

The legal framework for continuing education is given by the act 179/2006 Sb., on the VNFIL. It starts from the premise that lifelong learning is a continuous process which can follow multiple paths. The recognition of diverse educational paths is based on the recognition and validation of knowledge and skills in standardised examinations, on completion of which successful candidates receive a certificate of vocational qualification.

The act also specifies the procedure for collecting vocational qualifications into complete vocational qualifications. All complete vocational qualifications have counterparts in the initial education system. The final exam is the same for such complete vocational qualifications and their counterparts in initial education. Equivalence is defined in terms of learning outcomes - competences which are listed in both the NSK and in core curricula in initial education. Credits are not currently used in continuing education.

3.4 Criterion 4 - Transparent inclusion of qualifications in the educational and qualifications system

The procedures for inclusion of qualifications in the national qualifications framework or for describing the place of qualifications in the national qualifications system are transparent.

3.4.1 Initial education

The place of qualifications in the national system is defined in the Education Act and the Higher Education Act. Those documents do not use the term „qualification“, however the certificate documenting the completion of education and gained knowledge, skills and competences is in compliance with the definition of the term

[21] Šťastná, V., Pospíšilová, L.: National report Bologna Process 2007-2009
http://www.msmt.cz/uploads/Areas_of_work/higher_education/National_Report_09_Czech_Republic.pdf
http://ehea.cncsis.ro/Uploads/Documents/National_Report_Czech_Republic2007.pdf

„qualification“, as stated in the Recommendation for the Establishment of the EQF. These laws clearly set out the main levels of education, determine the characteristics of programmes of study at each level, the admissions requirements and the graduation requirements which lead to the awarding of a certificate and the appropriate level, *e.g.* apprenticeship certificate or diploma.

The documentary evidence of completion of lower secondary education is a report card from the 9th class of a combined primary-lower secondary (basic) school, from the 2nd year of a six year gymnazium, or from the 4th year of an eight year gymnazium or conservatory, or a certificate granted after completion of an equivalency course. This report card contains a statement that the student has completed lower secondary education.

Upper secondary education ends with a final examination, whether the qualification is awarded with an apprenticeship certificate, a Maturita, or neither. Study at conservatory ends with an "absolutorium" or Maturita examination.

The Maturita exam is a requirement for admission to tertiary education.

Tertiary vocational education ends with an "absolutorium". The absolutorium consists of examinations in vocational subjects, a foreign language examination, and the defence of a thesis. The absolutorium does not permit the student to continue in a master's programme.

A tertiary qualification is awarded after completion of an approved programme of study. Study can be either conventional or distance learning. The qualifications structure which follows from the Higher Education Act has three levels, bachelor's, master's and doctoral. Study ends with a final state examination, which includes a defence of a thesis. A condition for admission to bachelor's and long master's programmes is passing the Maturita exam. A condition for admission to master's programmes is successful completion of a bachelor's programme. A condition for admission to doctoral programmes is successful completion of a master's programme.

Register of Educational Programme Types

All educational programmes in primary, secondary and vocational tertiary education for which the Ministry of Education has issued core curricula, or approval of programmes of study in the case of vocational tertiary programmes, are listed in the government directive on the Register of Educational Programme Types in Primary, Secondary and Vocational Tertiary Education, 211/2010 Sb. It is based on the system of codes in the Classification of Educational Programme Types (KKOV), an earlier classification of programme types by field of study and level. The new register uses the same alphanumeric codes as the old classification. Levels of education are indicated by capital letters from B (primary) to N (vocational tertiary).

Schools listed in the Register of Schools can offer programmes only of types listed in the government directive 211/2010 Sb.

The old register is still used for non-vocational tertiary education.

Example programme code: 82-44-J/01 Piano Tuner

Field Identifier		Programme		Level of qualification		Sequential Identifier
82	-	44		J		01

82 Art and Design
44 Piano Tuning
J Upper Secondary
01 Sequential identifier

The alphanumeric code and corresponding programme name are listed on school reports and diplomas. The code allows the level and field of a qualification to be readily identified.

Table 5: Czech level codes and ISCED 1997 classification

Category	Qualification (Education) level	ISCED 2011-P	ISCED 2011-A
B	**Special Education** Completion of an educational programme in a special school - 10 years	**244**	**244**
C	**Lower Secondary Education** Successful completion of a primary and lower secondary education programme - 9 years **Upper Secondary Education** One or two year programme for graduates of special schools	**244** **253**	**244** **253**
J	**Upper Secondary Education** without Apprenticeship Certificate – 2 years of upper secondary study	**353**	**353**
E	**Upper Secondary Education with Apprenticeship Certificate** Primarily for students with disabilities 2 years of upper secondary study	**353**	**353**
E	**Upper Secondary Education with Apprenticeship Certificate** Primarily for students with disabilities 3 years of upper secondary study	**353**	**353**
H	**Upper Secondary Education with Apprenticeship Certificate** 3 years of upper secondary study	**353**	**353**
K	**Upper Secondary Education with Maturita Exam** General Education (Gymnazium) - 4 years of upper secondary study	**344**	**344**
L	**Upper Secondary with Maturita Exam** Vocational Education with practical training - 4 years of upper secondary study	**354**	**354**

	Supplementary study (follow-up courses) leading to Maturita exam 2 years of study after Apprenticeship Certificate	**354**	**354**
M	**Upper Secondary Education with Maturita Exam** Vocational Education - 4 years of upper secondary education	**354**	**354**
N	**Tertiary Vocational Education** DiS degree 3–3.5 years of tertiary education	**655**	**650**
P	**Education at Conservatories** DiS degree 2 years of tertiary education	**554**	**550**
R	**Bachelor's Programme** Bc. and BcA. degrees 3-4 years of tertiary education	**645**	**640**
T	**Master's Programme** Mgr., MgA., Ing., arch., MUDr., MDDr., MVDr., JUDr., PhDr., RNDr., Pharm.Dr., ThLic., and ThDr. degrees 2-3 years of tertiary education beyond Bachelor's or 4-6 years of tertiary education	**746** **747**	**740**
V	**Doctoral Programme** Ph.D., Th.D. degrees 3-4 years beyond Master's	**844**	**840**

A detailed overview of the two digit field codes can be found in the government directive 211/2010 Sb.[22]

3.4.2 Continuing education

The referencing of vocational qualifications to qualification levels in the NSK is described in the *Guidelines for Inclusion of Qualifications in the NSK*, and is part of the process of creating and approving qualifications standards, which is also described in the Guidelines.

The rules for referencing individual qualifications to qualification levels

Rules for referencing NSK qualifications to NSK levels

Qualification levels in the NSK are derived from the levels of the individual competences listed in their qualification standards. The following procedure is followed:

a) Levels for each competence are set individually based on comparison with the general competences which are level descriptors.

b) The resulting qualification levels correspond to the levels of the majority of competences in the learning outcomes, provided that no fundamentally important competences are missing.

c) If the learning outcomes include fundamentally important competences at a level different from those of most of the other competences then the whole qualification level is reevaluated with more weight attached to the important

[22] See http://www.msmt.cz/file/11266

competences. The resulting level then corresponds to that of the majority of the important competences.

d) If, after applying Rule c, there are important competences at a higher level than most of the other important competences then the qualification is reevaluated once more, to determine whether it forms a coherent single qualification.

The process of referencing individual qualifications to qualification levels

The referencing of qualifications to qualification levels in the NSK is an essential part of the process of creating and approving standards for qualifications, and consists of the following steps:

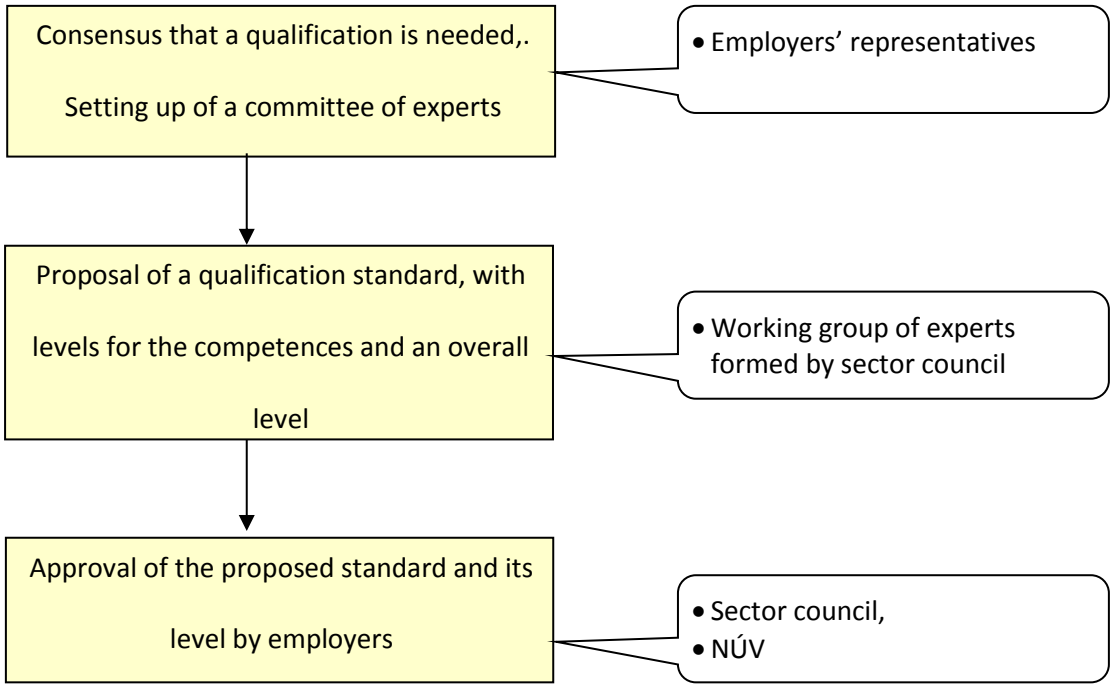
a) Employers' representatives decide by consensus on the needed qualifications. The sector councils then form working groups of experts who are asked to formulate proposed standards for these qualifications.

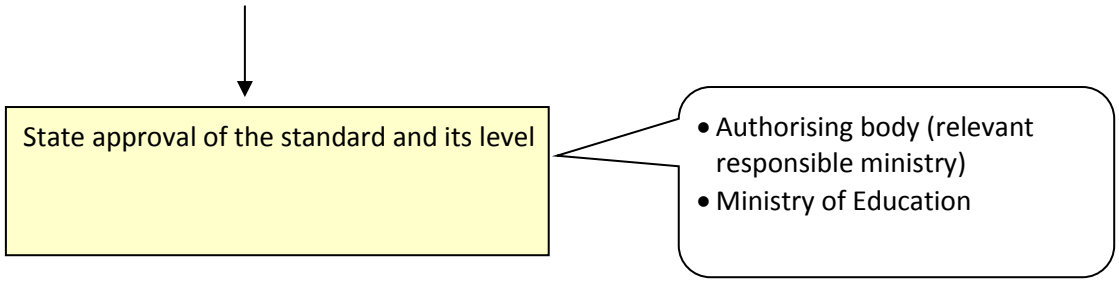
b) These experts formulate uniformly structured qualifications on the basis of the *Guidelines for Inclusion of Qualifications Standards in the NSK*. These Guidelines contain rules for the referencing of individual qualifications to qualification levels and also descriptors for these levels. On the basis of these rules and descriptors, the experts then assign to each qualification which they create, levels for the individual competences and for the qualification as a whole.

c) The proposed standard is then evaluated by the sector council, including an evaluation of its proposed level. The qualification level is also evaluated by the council member from NÚV, who checks conformity with the Guidelines.

d) The proposed qualification level is also evaluated in the course of the approval process.

The process is illustrated in the following diagram:





3.5 Criterion 5 - Quality assurance consistent with European principles

The national quality assurance system(s) for education and training refer(s) to the national qualifications framework or system and are consistent with the relevant European principles and guidelines (as indicated in Annex 3 of the Recommendation).

3.5.1 Quality assurance in primary and secondary education

Responsibility for quality assurance in the Czech Republic rests with the state, represented by the Ministry of Education, and, for primary, secondary and vocational tertiary education, the Czech School Inspectorate. The local authorities which operate the schools also play a role in quality assurance.

The evaluation of educational institutions is governed by §12 of the act 561/2004.

The Ministry or Education is responsible, under §9, for preparing every four years a long term plan for education and the development of the educational system and each year an annual report on the state of the educational system. In addition, the Ministry of Education publishes strategic reports, which formulate the basic principles and procedures in the area of quality assurance.

The main documents in Czech education are the *Czech National Educational Development Plan*[23], the *Strategy for Lifelong Learning in the Czech Republic* and *Strategy for Education Policy of the Czech Republic until 2020.*

The main changes in the Czech educational system since the adoption of the act 561/2004 are increased powers and responsibilities for local government. Schools are responsible for setting and achieving their own goals, based on the national curriculum. Cooperation among central government, regional government, social partners and parents is important. Despite the increased role of local government, key quality assurance mechanisms remain under the control of the state: setting of strategic goals and delimiting the competences of the actors in the educational process.

[23] http://aplikace.msmt.cz/pdf/whitepaper.pdf ÚIV, Praha 2001

The Czech School Inspectorate (CSI)

The CSI is a state agency responsible for external evaluation. The goal of its activities is to provide external evaluation and further information on the school system. Its tasks are determined by the act 561/2004 and it represents the Czech Republic in relevant EU fora.

The CSI publishes its evaluation criteria to educational institutions. In addition to these criteria, which are checked annually, there are thematic investigations, aimed at particular types of schools or particular issues.

The Inspectorate publishes summary comments on the state of the educational system in its annual report.

Representatives of the Inspectorate, together with representatives of NÚV represent the Czech Republic in EQAVET. The Inspectorate is the national reference point (EQAVET CZ) for the implementation of the European Framework for Quality Assurance in Vocational Education.

Education Providers

The evaluation of schools by education providers (which can be the central government, regional government, local government, or other organisations or persons) must be subject to monitoring by these providers, who have a duty to ensure the effective use of financial support from the state, which the schools receive for providing a public service in offering primary, secondary or vocational tertiary education. The responsibility of local and regional government for monitoring the activities of organisations which they control is governed by various pieces of legislation, including the acts on local government (128/2000 Sb.) and regional government (129/2000 Sb.), the Education Act and the act on subsidies for private schools. This monitoring is required to cover all activities of the school: educational, personnel management, economic and facilities.

Social partners

Among the social partners who play a major role in education are employers. Cooperation between employers and secondary schools is strongest in the area of vocational education, where they have an interest in supporting the quality of outputs with a view to the employability of graduates. In accordance with §4 of the Education Act, national associations of employers, such as the Chamber of Commerce or the Confederation of Industry of the Czech Republic, participate in the formulation of national curricula. Employers provide students of vocational schools with training in a real work environment. The working conditions of students in practical training are governed by the act 262/2006 Sb., the Labour Code. The companies with which students do their practical training sign contracts with the school.

School councils

School councils enable students, parents or legal guardians, educational staff, local authorities and other interested parties to participate in the management of the school. Their organisation and operation is regulated by the Education Act.

Assessment of students

The main form of assessment of students is by their teachers. On the basis of this assessment, the student receives marks twice annually. Assessment can be on a scale of 1 (highest) to 5 (failing), or verbal assessment, or a combination.

Rules for the assessment of learning outcomes are part of the school rules and are based on the core curricula and the school's own educational programme. These rules are approved by the school council.

Final assessment of students in upper secondary education is governed by the Education Act. The final examination in programmes leading to an Apprenticeship Certificate or Maturita takes place before an examination committee, which includes external experts. In the case of final examinations, the participation of external experts is required by law.

In addition, national and international surveys are used to monitor quality.[24]

3.5.2 Quality assurance in higher education

The main quality assurance mechanism in higher education is the approval of programmes and the granting of the right to conduct habilitation or professorial promotion procedures. Approval is given by the Ministry of Education on the basis of the reports of the **Accreditation Commission**. Its activities and the rules of the approval process are governed by the Higher Education Act and the regulation 42/1999 Sb., on the Contents of Requests for Accreditation of Academic Programmes.

The Czech government names the 21 members of the Commission on the recommendation of the Ministry of Education. The members, who by law must be "generally recognised experts", are named for a period of six years and may serve a second term. Their evaluation is by law independent. Each member of the Commission has his or her own work group, which prepares material for the Commission.

Approval of study programmes is granted for up to ten years, but may be renewed. The Commission evaluates the quality of proposed programmes of study on the basis of given minimal standards, relating to personnel, resources and information.

The right of institutions to conduct habilitation and professorial promotion procedures is subject to approval. These are judged mainly on the research activities of the institution.

[24] *E.g.* PISA 2006, PISA 2009, TIMSS 2007, PIRLS 2011, TIMSS 2011 (source ÚIV), projects Evaluation of learning outcomes of 9th grade students 2006 and Evaluation of learning outcomes of 5th grade students 2006 (CERMAT).

The Accreditation Commission also considers applications for new private higher education institutions, and for the establishment, merging, splitting, or abolition of faculties at public institutions and in decisions about university versus non-university status.

The law also charges the Accreditation Commission with **external evaluation of the quality** of higher education institutions. When it discovers inadequacies it can recommend to the institution that these be remedied in a reasonable timeframe. In the case of serious problems it can recommend to the Ministry, depending on the circumstances, either restrictions on study programmes, *i.e.* a ban on accepting new students, or suspension of a programme, *i.e.* a ban on conducting examinations and granting titles, or even the dissolution of the programme. Similar remarks apply to quality assurance in habilitation and professorial procedures.

The Commission supports the implementation of the *Standards and Guidelines for Quality Assurance in the European Higher Education Area*; this is a condition of membership in the European Quality Assurance Register (EQAR), and for full membership in the European Association for Quality Assurance in Higher Education (ENQA). The Commission has begun to include students, in cooperation with the Student Chamber of the Council of Higher Education Institutions, in its working groups for the evaluation of tertiary institutions.

The law charges individual institutions with conducting **internal evaluations of quality**, which serve both for guiding improvements in the institution and as a basis for external evaluation. The system of quality assurance in individual institutions includes narrow measures (student evaluation of teaching), comprehensive systems like ISO 9000, internally developed systems, and methods borrowed from international organisations, like the European University Association.

Difficult state examinations, the defence of written theses, and the presence of external members of examination committees all play important roles in quality assurance.

Quality assurance in the vocational tertiary education is similar to that in non-vocational education. This includes approval of educational programmes by the Ministry of Education on the basis of the recommendations of the **Accreditation Commission for Tertiary Vocational Education** (AK VOV). This Commission also has 21 members and these are named by the Ministry of Education. By law, these members must include experts from both vocational and other higher education institutions, and industry.

Other parts of the quality assurance system are defence of final theses, in which students demonstrate the knowledge, skills and competences, in the presence of at least one external examiner as the chair of the examination committee for the absolutorium.

External evaluation of programmes in these institutions is performed not by the AK VOV but by the School Inspectorate. Internal evaluation is governed by the regulation 15/2005 Sb., which sets out rules for long term plans, annual reports, and self-evaluation of schools. This regulation applies to all schools covered by the Education Act.

3.5.3 Quality assurance in the system for the VNFIL, under the act 179/2006 Sb.

Conditions for granting authorisation are set out in the act 179/2006. Authorised bodies appoint individual representatives.

The act 179/2006 Sb., on the VNFIL allows everyone who is interested to have the outcomes of their prior learning assessed, independently of how these knowledge, skills and competences were acquired. This act is oriented towards the assessment and validation of continuing vocational education and preparation for employment.

Assessment of competences is performed by authorised persons or bodies, or by commissions chaired by authorised persons, or by representatives of authorised bodies.

Conditions for the granting of authorisation are governed by the act 179/2006 Sb. Authorised bodies must have an authorised representative who is a physical person.

The assessment and validation of vocational qualifications is only possible once these have been approved by the Ministry of Education and published on the pages of the NSK at www.narodni-kvalifikace.cz. Assessment proceeds according to the rules set out in the assessment criteria. These determine which skills must be tested in the examination and how. The assessment criteria are binding on the examiner.

On successful completion of the examination, candidates receive a certificate, valid throughout the Czech Republic, which is useful:

- On the labour market - the vocational qualification certificate demonstrates to employers what the holder can do. Employers (represented on the sector councils) participate in the formulation of vocational qualifications.
- In education - certificates for all the vocational qualifications listed in the NSK as the parts of a complete vocational qualification enable the holder to sit an apprenticeship or Maturita exam to receive the relevant qualification.
- In self-employment - qualifications awarded under the act 455/1991 Sb., as amended, on Self-Employment, are one of the permitted ways of satisfying the requirements for entry into certain regulated professions.[25]

The Czech quality assurance system for the education and qualifications system is based on various legal sources. The instruments of quality assurance cover all sectors

[25] There are plans to amend the act 455/1991 to bring it into closer alignment with the act 179/2006.

and levels of education and all qualifications awarded both in initial education and under the act 179/2006 Sb. The quality assurance mechanisms described above are consistent with the relevant European principles and guidelines listed bellow (in Annex 3 of the Recommendation).

3.5.4 Consistency of quality assurance in higher and vocational education with the relevant European principles and guidelines.

Quality assurance policies and procedures should underpin all levels of the EQF

Quality assurance concerns all qualifications which are referenced to national levels and tothe EQF. The Czech Republic has legally binding rules for each level of education which set out the procedures for approval of core curricula, approval of programmes of study, and participation of external examiners in examinations (final exams for apprenticeship certificates, Maturita exams, university leaving exams, and absolutoria). Qualification certificates have a format prescribed by law.

Quality assurance should be an integral part of the internal management of education and training institutions

Educational institutions at all levels, *i.e.* primary schools, secondary schools, conservatories, and higher education institutions, are required by law to conduct internal evaluations of their activities and report their results.

The law requires HE institutions to incorporate in the statutes approved by their academic senates "a description of the content, nature and number of their evaluation activities." The statutes also generally list other quality assurance mechanisms, such as student evaluations. Tertiary vocational institutions have a similar duty under the Education Act and the regulation referred to above.

Support for internal evaluation

To support schools in this area, the Ministry of Education conducted the project Path to Quality, financed from the European Social Fund and the Czech national budget, which attempts to help schools with a range of supporting activities. The project was managed by NÚOV and the National Institute for Continuing Education (NIDV).

The main supporting activities were: the creation and testing of 30 evaluation mechanisms (questionnaires, observation forms, guidelines for group discussions, etc.), the creation of 20 examples of best practice, an electronic glossary of terms in the field of evaluation, guidelines for combining self-evaluation and external evaluation, mutual learning activities, such as workshops, exchange visits, peer review, conferences. Further information is available at www.nuov.cz/ae.

Quality assurance should include regular evaluation of institutions, their programmes or their quality assurance mechanisms by external monitoring bodies or agencies

In the primary, secondary and vocational tertiary sectors, external evaluations are carried out by the Czech School Inspectorate. The Inspectorate publishes summary comments on the state of the educational system in its annual reports. Its inspection

activities are carried out in accordance with the Task List of the CSI, approved by the Ministry of Education.

In non-vocational tertiary institutions this role is played by the Accreditation Commission, which publishes a public report.

External monitoring bodies or agencies carrying out quality assurance should be subject to regular review

The Czech School Inspectorate, which carries out external evaluation of primary, secondary and vocational tertiary institutions, is a state agency. Its task lists and annual reports are approved by the Ministry of Education. Its activities are also monitored by the Supreme Audit Commission (NKÚ). The Czech School Inspectorate is involved in the activities of the community European Quality Assurance in Vocational Education and Training (EQAVET). EQAVET does not carry out evaluations of its members, but members regularly report on their activities.

The Accreditation Commission regularly carries out its own internal evaluations. It is a member of the European Association for Quality Assurance in Higher Education (ENQA), which carries out external evaluations of its members. The Accreditation Commission was the subject of such an evaluation in 2009/2010[26]. The review panel found substantial or full compliance with all ENQA membership criteria and the ESG.

Quality assurance should include context, input, process and output dimensions, while giving emphasis to outputs and learning outcomes

The evaluation of learning outcomes is traditional in Czech education. All programmes of study must include the goals of the programme, the characteristics of the area of study, and a programme description (Graduate Profile). These list learning outcomes. They contain conditions for entry into and successful completion of the programme. All of these aspects are taken into account in evaluation.

Quality assurance systems should include the following elements:

- clear and measurable objectives and standards, guidelines for implementation, including stakeholder involvement
- appropriate resources,
- consistent evaluation methods, associating self-assessment and external review,
- feedback mechanisms and procedures for improvement,
- widely accessible evaluation results.

Taking into account the quality assurance measures mentioned above, we can identify all following elements:

- **Clear and measurable objectives and standards, guidelines for implementation, including stakeholder involvement**

The goals, standards and implementation procedures are set out generally in the relevant laws and regulations and then further developed in the statutes of the

[26] See http://www.enqa.eu/files/Final%20Report_External%20review%20of%20ACCR.pdf

accreditation commissions and the School Inspectorate and in other materials, *e.g. Standards for the Assessment of Applications for Accreditation*. The Inspectorate publishes annually an updated list of criteria for evaluating facilities, teaching methods, learning outcomes, and school services for the forthcoming school year. The documents mentioned above also mandate the participation of stakeholders.

- **Appropriate resources**

The Ministry of Education provides the budget of the Czech School Inspectorate and both accreditation commissions. They also receive money from international institutions, especially the EU, for various projects which, however, are generally of limited duration and cannot be used for recurring costs.

- **Consistent evaluation methods, associating self-assessment and external review**

The existence and function of both internal and external evaluation follow from the descriptions above. Internal evaluation is regularly used as a basis for external evaluation.

- **Feedback mechanisms and procedures for improvement**

Evaluation reports of the Accreditation Commission and the Czech School Inspectorate always conclude with a section containing recommendations for improving the activities of the institution being evaluated. Both institutions follow up on these, to see how their recommendations have been implemented and draw appropriate conclusions if they have not been implemented.

- **Widely accessible evaluation results**

The results of both internal and external evaluations of higher education institutions are published. In the primary, secondary and vocational tertiary sectors, the inspection reports of the Czech School Inspectorate are publicly available.

Quality assurance initiatives at international, national and regional level should be coordinated in order to ensure overview, coherence, synergy and system-wide analysis.

On the international level coordination of initiatives is ensured by membership in the two important European initiatives ENQA and EQAVET. Work stemming from these activities influences the coordination of national and regional initiatives.

Quality assurance should be a cooperative process across education and training levels and systems, involving all relevant stakeholders, within member states and across the community.

Cooperation between the vocational and non-vocational tertiary sectors is relatively weak. It occurs through the mandatory participation of experts from non-vocational institutions in the Accreditation Commission for Tertiary Vocational Education. The involvement in institutions' quality assurance processes of stakeholders outside those institutions is stronger in the vocational tertiary sector. Cooperation of employers and schools is anchored in the Education Act and further developed by the Labour Code. Agreements are often concluded not just with companies but also with state and local

agencies. Experts from the private sector are represented in the Accreditation Commission for TVE and as members of examination committees. In the rest of the tertiary sector, the participation of outside actors in the educational process and quality assurance is not always prescribed, but it does exist, *e.g.* membership of scientific committees, examination commissions, etc.

Cooperation within the Union takes place in the area of recognition of qualifications, covered by the Lisbon Convention, and in the area of quality assurance. The Czech Accreditation Commission, for example, has a long term cooperation with that of the Slovak Republic. The Czech School Inspectorate is among the founding members of the Standing International Conference of Inspectorates (SICI), an organisation grouping national and regional educational inspectorates. Czech membership in ENQA and EQAVET makes possible cooperation with other agencies.

Quality assurance orientations at Community level may provide reference points for evaluations and peer learning

Common European principles of quality assurance are respected by all national quality assurance bodies in the Czech education and qualifications systems.

The Accreditation Commission uses the *Standards and Guidelines for Quality Assurance in the European Higher Education Area* in its work. These standards and guidelines are also used by many institutions in internal evaluations.

3.6 Criterion 6 - Agreement of the quality assurance bodies

The referencing process shall include the stated agreement of the relevant quality assurance bodies.

Representatives of the Czech quality assurance bodies, *i.e.* the Czech School Inspectorate and the Accreditation Commission, were asked for their comments on the results of the referencing process during the consultation process and for their formal approval after the referencing conference at which the referencing report was discussed. For more details see Appendix V.

3.7 Criterion 7 - Participation of international experts

The referencing process shall involve international experts.

The participation of international experts in the referencing process was made possible by a grant from the European Commission for the project NCP-EQF.

The people who were selected are top European experts in their areas. The team consisted of an expert on tertiary education and learning outcomes (Stephen Adam), a specialist on vocational education (Simon Field) and an expert on the EQF and the referencing process (Karin Luomi-Messerer). This ensured a balance of approaches and a comprehensive view of the issues.

Stephen Adam was the Head of International Relations and European Studies at the University of Westminster. He has been a promoter of the Bologna Process and an ECTS and diploma supplement counsellor. He is the author of a number of research projects and studies for various governments and national agencies, the European Commission, Council of Europe and UNESCO. He has worked on a number of higher education reform projects for the governments of Portugal, Thailand, Australia, Bosnia-Hercegovina, Serbia and the Ukraine.

Simon Field has worked for the OECD for ten years, where he specialises in vocational education. He conducted extensive reviews of vocational education in 16 countries. He led the team of authors of the OECD comparative report *Learning for Jobs* on the basis of these reviews.

Karin Luomi-Messerer works for 3s, a research and consulting institution in Austria, in the area Education and the Labour Market. She has participated in and led many projects related to the EQF. For example, she was the coordinator of the project EQF-Ref, on the referencing process and the content of referencing reports with an emphasis on their transparency and credibility. She provides expertise for the European Commission on the subject of EQF implementation and for the Austrian Ministry of Education, Art and Culture on the creation of their National Qualifications Framework and the national referencing process and its ratification in Austria.

In November 2010, Stephen Adam and Karin Luomi-Messerer spoke on the Czech referencing process at a meeting of higher education experts and participated in a seminar where studies referencing of higher education qualifications and quality assurance in higher education were presented. On the basis of these discussions and comparisons, they made a number of suggestions which were discussed by the editorial board and taken into account in preparing the referencing report.

A second meeting, with all international experts present, took place in March 2011. There they discussed the draft report with the report's authors and with other Czech experts. The international experts also gave presentations at the international conference on the Czech referencing process. Their comments on the draft report were discussed with the editorial board and taken into account in preparing the final version.

3.8 Criterion 8 - Writing of the referencing report and certification

The competent national body or bodies shall certify the referencing of the national qualifications framework or system with the EQF. One comprehensive report, setting out the referencing and evidence supporting it, shall be published by the competent national bodies, including the National Coordination Point, and shall address separately each of the criteria.

This report, written by the NCP CZ in cooperation with other stakeholders, explains and justifies the procedures and results of the referencing process and describes the fulfilment of the criteria set by the EQF AG. The procedure for the referencing process and timetable for the writing of the report were approved by the Ministry of Education. The validity of the results is confirmed by decision of the minister. The referencing report was approved by the Czech cabinet and has been published on the websites of the Ministry of Education and the NCP CZ.

For more details see Appendix IV.

3.9 Criterion 9 - Publication of the report on the web

The official EQF platform shall maintain a public listing of member states that have confirmed that they have completed the referencing process, including links to referencing reports.

The final version of the referencing report will be presented in its English version to the EQF Advisory Group. The report was updated in 2013 and underwent a revision in 2015 that reflected changes in legislation and also comments by the EQF Advisory Group, Council of Europe and Cedefop.

3.10 Criterion 10 - Listing of EQF level on all diplomas and qualification certificates

Following the referencing process, and in line with timelines set in the Recommendation, all new qualification certificates, diplomas and Europass documents issued by the competent authorities shall contain a clear reference, by way of national qualifications systems, to the appropriate European Qualifications Framework level.

On the basis of a study which was conducted as part of the project NCP-EQF, it was decided that a reference to corresponding EQF levels will be included on qualification certificates and diplomas.

The affected certificates are: school reports from the 9th year of combined primary/lower secondary schools (basic schools), or from the 2nd year of six year gymnazia, or the 4th year of eight year gymnazia or conservatories, or on the basis of an equivalency exam; certificates for final examinations at upper secondary education (for two and three-year educational programmes), including apprenticeship and Maturita exams; absolutorium result certificates from conservatories, or absolutorium diplomas from vocational tertiary institutions, higher education diploma supplements; certificates confirming professional qualifications.

A reference will be included also on Europass certificate supplement and diploma supplement.

From a practical point of view, these are the most commonly awarded qualifications certificates. These documents are archived, so they can be retrieved in case of loss or suspicion of fraud.

Technical obstacles are minor, by changing the printed forms, which was for the initial secondary education done by the regulation 3/2015 Sb. On certificates confirming vocational qualifications awarded under the act 179/2006will be the EQF level listed in compliance with theregulation 110/2012 Sb.

The reference to EQF levels in Europass certificate supplements is added to Section 5 (Official Basis of the Certificate), where, in the line field "Level of the certificate (national or international)" which records the educational level attained on the basis of the laws in force when the certificate was awarded and also the corresponding ISCED level and in the same section in the field "Access to next level of education/training". The structure of the document will be unchanged. It will simply be expanded to contain more information. (Fig. 4)

Fig. 4 Sample diploma supplement, listing the EQF level

<table>
<tr><td colspan="2">5. OFFICIAL BASIS OF THE CERTIFICATE</td></tr>
<tr><td>Name and status of the body awarding the certificate</td><td>Name and status of the national/regional authority providing accreditation/recognition of the certificate
Ministry of Education, Youth and Sports
Karmelitska 7
118 12 Prague 1
Czech Republic</td></tr>
<tr><td>Level of the certificate (national or international)

Upper secondary education completed by the final examination (Apprenticeship Certificate)

ISCED 3C

EQF 3</td><td>Grading scale / Pass requirements

1 excellent
2 very good
3 good
4 satisfactory
5 fail
Overall assessment:
Prospěl s vyznamenáním: Pass with Honours
(the average mark is ≤ 1,5)
Prospěl: Pass (an examination mark is not worse than 4)
Neprospěl: Fail
(the examination mark in one or more subjects is 5)</td></tr>
<tr><td>Access to next level of education / training

Follow-up courses – ISCED 4

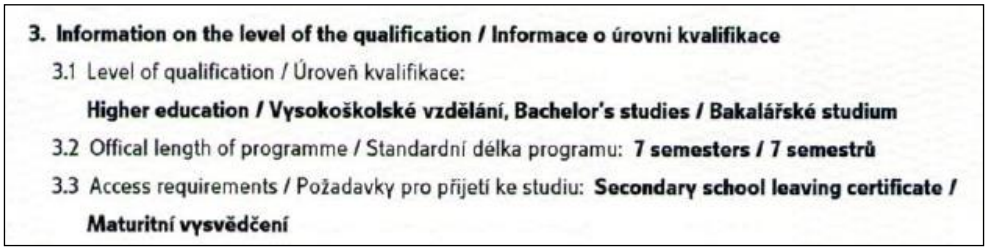
EQF 4</td><td>International agreements</td></tr>
<tr><td colspan="2">Legal basis
The act 561/2004 Sb., on Preschool, Elementary, Secondary and Tertiary Professional and Other Education, as amended, (the Education Act))</td></tr>
</table>

Diploma supplements are issued by non-vocational higher education institutions on the basis of §57g, of the act 111/1998 Sb., on Higher Education Institutions. The Diploma Supplement is, along with the diploma, the proof of successful completion of the relevant programme of study.

It is recommended that information about the EQF level be added to Section 3 (Information on the level of the qualification), in field 3.1, which describes the level of the qualification (Fig. 5). The diagram of the educational system on the supplements will have the EQF levels added. The Research and Higher Education Section of the Ministry of Education recommends that all tertiary institutions add this information to their diploma supplements. The issue will also be added to the agenda of seminars conducted by ENIC/NARIC for Czech public, ministerial (state) and private non-vocational tertiary institutions.

The changes can not be made centrally, but must take place at 27 public, two ministerial and 46 private tertiary institutions, which are responsible for its implementation. The Research and Higher Education Section of the Ministry of Education recommends that all tertiary institutions add this information to their diploma supplements.

Fig. 5 Sample diploma supplement, listing the EQF level



3. Information on the level of the qualification / Informace o úrovni kvalifikace

3.1 Level of qualification / Úroveň kvalifikace:
Higher education / Vysokoškolské vzdělání, Bachelor's studies / Bakalářské studium

3.2 Offical length of programme / Standardní délka programu: **7 semesters / 7 semestrů**

3.3 Access requirements / Požadavky pro přijetí ke studiu: **Secondary school leaving certificate / Maturitní vysvědčení**

The issuing of Europass diploma supplements by tertiary vocational institutions does not have legislative support. These institutions may or may not issue the documents. Currently the Czech Europass Centre is working with 107 institutions, *i.e.* with the majority of such institutions, on issuing these documents.

The vocational tertiary institutions issue documents uniform in format and contents, derived from the non-vocational diploma supplements.

Information on EQF levels was added in Section 3, field 3.1., which describes the qualification level (Fig. 6). The documents remain the same. They were expanded to contain more information, as in the case of non-vocational institutions, both in the Czech and English version, where these are issued separately.

This change was made centrally, because all materials for the issuance of these documents are provided to the institutions by the Czech National Europass Centre.

Fig. 6 Sample diploma supplement (VOŠ), listing the EQF level

3. INFORMATION ON THE LEVEL OF THE QUALIFICATION			
	Level of education		Official length of programme
3.1	ISCED 5B, EQF 6	3.2	
	Access requirements		
3.3	ISCED 3A, ISCED 3B, EQF 4		

Within the system of qualifications awarded under the act 179/2006 Sb., contain all templates of the certificates confirming vocational qualifications a reference to the EQF level (regulation 208/2007 Sb.).

4. Future development

The process of referencing Czech qualifications to the EQF has been underway since 2008. The process will ultimately lead to the possibility of comparing what someone knows and what jobs he can do, *i.e.* his knowledge, skills and competences, in any European countries. So far qualifications awarded in formal education have been referenced, *e.g.* Apprenticeship Certificate or Bachelor's, as have vocational qualifications awarded in continuing education, *e.g.* cashier, elevator installer or search and rescue dog trainer.

The outcome of the Czech referencing process is the assignment of an EQF level to each qualification in initial and continuing education.

No comprehensive qualifications framework for the Czech Republic has been developed. Between 2012 and 2014 several discussions took place about whether one is needed. Expert activities initiated by the NCP EQF and supported financially by the European Commission were carried out as well. A study on the development of the Czech Qualifications Framework was recommended to be discussed by the Top Management Meeting of the Ministry of Education, Youth and Sports at the end of 2015. . Some steps have however been already taken which formed a starting point for one. In January 2010 the Ministry of Education approved a qualifications framework for qualifications contained in the National Register of Qualifications (NSK), described in Section 2.4. Since 2009 the Czech Republic implemented the national project National Qualifications Framework for Tertiary Education (Q-Ram) within the operational programme Education for Competitiveness. This project created national descriptors for the three cycles of higher education and for a short cycle within the first cycle. These cycles correspond to EQF levels 5-8. Descriptors are divided into professional knowledge, professional skills and general competences. The Ministry approved these descriptors in October 2010. The project Q-Ram was also working on descriptors for professional knowledge and skills in 42 fields. Furthermore, NÚV proposed national descriptors for EQF levels 1-4 in 2012 and in 2013 descriptors for a comprehensive NQF were drafted in a group of experts that reflect both, all developed descriptors and core curricula as well. This proposal divided descriptors into three categories compatible with EQF and Q-Ram descriptors.

Uniform descriptors could have a positive influence on the plans of the Ministry of Education in the area of validation of learning outcomes in the Czech education system and its sectors. Currently, the only uniform element in the evaluation of learning outcomes in the Czech formal education system is the standardised part of the reformed Maturita examination.

The projects NCP-EQF between 2012 and 2015 funded by the European Commission played a significant role by the implementation of the Czech Qualifications Framework.

Reform of the Maturita Examination

The standardised part of the Maturita examination comprises two examinations. The range of knowledge and skills which can be tested in the standardised part is set out for all relevant programmes of study in what are called catalogues of requirements. The catalogues are published by the Ministry in electronic form at least two years in advance of the examination date.

The content of the part of the examination specific to each school is set by its director, in accordance with national and school curricula. More information is available, in Czech only, at http://www.novamaturita.cz.

Changes are being planned in three year vocational programmes and in primary and lower secondary education. For three year vocational programmes (EQF level 3) a standardised exam is already being pilot tested.

Reform of the final exams for vocational secondary education (apprenticeship exam)

Common Final Examination follows the § 74, of the Education Act and is mandatory according to the amendment of the Education Act 82/2015 Sb.:

"During final examinations schools use uniform tasks and related testing documentation. The ministry or legal person entrusted by the ministry to develop uniform tasks and testing documentation for the final examinations prepare these tasks and documentation for schools and makes them available.."

The apprenticeship examinations for vocational secondary schools in the Czech Republic have been undergoing a major reform since 2005. This reform is directed and implemented by the National Institute for Education (NÚV) in a project supported by the European Social Fund and consists of the preparation of common papers for educational programmes in vocational secondary education.
The papers for individual subjects are prepared centrally, at NÚV in cooperation with teachers from vocational schools and experts from industry.
In the school year 2012/2013, more than 80% of of students in three year programmes leading to an apprenticeship certificate, took the standardised examinations. It is expected that since 2014/15 the standardised final exam will be mandatory. More information is available, in Czech only, at www.nuov.cz/nzz.

The Ministry has begun discussions on examinations at the end of primary and lower secondary education.

The result of the referencing process can be understood as an entry ticket in the European education area. The Czech Republic fulfilled the criteria for the implementation of the EQF, and referenced its education and qualifications systems while simultaneously leaving room for further discussion of the need for a comprehensive national qualifications framework, which would reflect changes in the tertiary sector, *e.g.* to the system of accreditation and quality assurance, or to the structure of qualifications.

The process will not end with the publishing of the national referencing report. The referencing described here, informed by other countries' experience in EQF implementation, should be implemented and tested, with particular attention to the recognition of the outcomes of prior learning, so the responsible institutions receive relevant feedback, in the national and European context, for possible future

modification, extension or updating of the relation between national qualifications and the EQF.

Glossary

Assessment standard (in the NSK)

An assessment standard is a set of criteria and organisational procedures for the verification of the technical ability to perform a work activity in a particular occupation.

Bologna Process

The Bologna Process began with the signature of the Bologna Declaration in 1999. Its goal was to unify the higher education systems of the EU countries in such a way that all of them have three levels: bachelor's, master's, and doctoral. These are further described by the Dublin Descriptors (2002).

Classification codes for qualification levels

Qualification levels are indicated by alphebetic codes from B (Special Education) to V (doctoral) in the Czech education system. For example, upper secondary education with a Maturita Exam is divided into categories K (General), L (Vocational with practical training) and M (Vocational).

Competence

A competence is proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development. In EQF, the competences are described in the sense of responsibility and independence.

In the context of the **NSK competence** means a collection of specialised requirements for employment in a particular occupation including relevant knowledge and skills.

Complete vocational qualification (in the NSK)

A complete vocational qualification is the ability to carry out all work activities in a particular profession.

Continuing education

Continuing education after initial education and training – or after entry into the labour market.

EQF National Coordination Points

EQF National Coordination Points (NCPs) have been established in EU countries. NCPs have been working on the referencing the EU countries qualifications frameworks to the EQF. The EQF National coordination point in the Czech Republic (NCP CZ) is a part of NÚV.

Higher education

The words higher and tertiary are used interchangeably in this report to refer to all formal post-secondary education.

Informal learning

Learning resulting from daily activities related to work, family or leisure. It is not organised or structured in terms of objectives, time or learning support. Informal learning is in most cases unintentional from the learner's perspective.

Initial education

General or vocational education and training carried out in the initial education system, usually before entering working life.

Knowledge

Knowledge means the outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study. In the context of the European Qualifications Framework, knowledge is described as theoretical and/or factual.

Learning outcomes

Learning outcomes means statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and competence.

Lifelong learning

Lifelong learning includes all possible ways of learning, whether at traditional educational institutions or outside of them. These are understood as a unified whole, permitting multiple transitions between education and employment and allowing the same qualifications to be acquired by various pathways at any stage of life.

Maturita examination

The Maturita is the Czech school leaving examination, equivalent to the Abitur, Baccalauréat, A levels *etc*. The new Maturita Examination contains a common part, consisting of three required exams. These examinations are common to all relevant programmes of study, whether general or vocational. The examinations are set by the Ministry of Education.

National qualifications system

NQS means all aspects of a member state's activity related to the recognition of learning and other mechanisms that link education and training to the labour market and civil society. This includes the development and implementation of institutional arrangements and processes relating to quality assurance, assessment and the award of qualifications. A national qualifications system may be composed of several subsystems and may include a national qualifications framework.

National qualifications framework

NQF means an instrument for the classification of qualifications according to a set of criteria for specified levels of learning achieved, which aims to integrate and coordinate national qualifications subsystems and improve the transparency, access, progression and quality of qualifications in relation to the labour market and civil society.

Non-formal learning

Learning which is embedded in planned activities not explicitly designated as learning (in terms of learning objectives, learning time or learning support). Non-formal learning is intentional from the learner's point of view.

Vocational qualification (in the NSK)

A vocational qualification is the ability to perform a particular work activity or a unified collection of work activities which are independently applicable in the labour market. Vocational qualifications can form part of a complete vocational qualification.

Qualification

For purposes of the Recommendation on the establishment of the European Qualifications Framework for lifelong learning a qualification means results of assessment and validation achieved in the time when a responsible subject stipulates that the individual achieved learning outcomes according to given standards.

For purposes of the National Register of Qualifications (NSK) complete vocational qualifications and vocational qualifications are distinguished.

Qualification standard (in the NSK)

A qualification standard is a structured description of specialised competences needed for proper performance of working activities in an occupation.

Skills

Skills means the ability to apply knowledge and use know-how to complete tasks and solve problems. In the context of the EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments).

Tertiary education

The words higher and tertiary are used interchangeably in this report to refer to all formal post-secondary education.

Abbreviations

AK – Akreditační komise (Accreditation Commission Czech Republic)
AK VOV – Akreditační komise pro pro vyšší odborné vzdělávání (Accreditation Commission for Tertiary Vocational Education)
CERMAT – Centrum pro zjišťování výsledků vzdělávání (Centre for measuring education results)
CSVŠ – Centrum pro studium vysokého školství (Centre for Higher Education Studies)
ČŠI – Česká školní inspekce (Czech School Inspectorate)
DD – 'Dublin' descriptors
ECTS – European Credit Transfer and Accumulation System
ECVET – European Credit System for Vocational Education and Training
ENIC – European Network of National Information Centres on Academic Recognition and Mobility
ENQA – European Association for Quality Assurance in Higher Education
EQAR – European Quality Assurance Register for Higher Education
EQARF – European Quality Assurance Reference Framework, incorporated into EQAVET
EQAVET – European Quality Assurance Reference Framework for Vocational Education and Training
EQAVET-CZ – EQAVET National Referencing Point for the Czech Republic
EQF – European Qualifications Framework for Lifelong Learning
EQF AG – EQF Advisory Group
ESG - Standards and Guidelines for Quality Assurance in the European Higher Education Area
ISCED – International Standard Classification of Education
KKOV – Klasifikace kmenových oborů vzdělání (Classification of Educational Programmes Types)
LLP LdV – Lifelong Learning Programme Leonardo da Vinci
MŠMT – Ministerstvo školství, mládeže a tělovýchovy (Ministry of Education, Youth and Sports)
MPSV – Ministerstvo práce a sociálních věcí (Ministry of Labour and Social Affairs)
MV – Ministerstvo vnitra (Ministry of Interior)
MZd – Ministerstvo zdravotnictví (Ministry of Health)
NAEP – National Agency for European Educational Programmes
NARIC – National Academic Recognition Information Centres
NCE – Národní centrum Europass (National Europass Centre)
NCP – National Coordination Point for EQF
NCP CZ –NCP Czech Republic (Koordinační centrum EQF)
NIDV – Národní institut pro dalšího vzdělávání (National Institute for Continuing Education of teachers)
NKÚ – Národní kontrolní úřad (Supreme Audit Commission)
NSK – Národní soustava kvalifikací (National Register of Qualifications)
NSP – Národní soustava povolání (National System of Occupations)
NÚOV – Národní ústav odborného vzdělávání (National Institute of Technical and Vocational Education), merged with two other agencies in July 2011 to form NÚV

NÚV – National Institute for Education, Education Counselling Centre and Centre for Continuing Education of Teachers
NZZ – Nová závěrečná zkouška (New Apprenticeship Examination)
QF-EHEA – Qualifications Framework for European Higher Education Area
Q-Ram – project National Qualifications Framework for Tertiary Education
RVP – Rámcový vzdělávací program (Framework Educational Programme -core curriculum)
RVP G – Core curriculum for general education (gymnazia)
RVP GSP – Core curriculum for general education (gymnazia) with an emphasis on sports
RVP OV – Core curricula for vocational education
RVP SV – Core curriculum for education in practical schools
RVP ZŠS – Core curriculum for special basic schools
RVP ZV – Core curruculum for basic education
RVP ZV-LMP – Appendix to core curriculum for basic education for students with mild mental disabilities
SICI – Standing International Conference of Inspectorates
TVE – Tertiary vocational education
ÚIV – Ústav pro informace ve vzdělávání (Institute for Information on Education)
VNFIL – Validation of non-formal and informal learning
VOŠ – Vyšší odborná škola (tertiary vocational institution)
VÚP – Výzkumný ústav pedagogický (Research Institute of Education)

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Appendices

I. List of institutions involved in the referencing process

Institutions represented in the NCP CZ Advisory Group, the EQF Implementation Working Group of the National Council for Qualifications, and the composition of the Editorial Board of the National Reference Report[27]

The NCP CZ Advisory Group includes representatives of the following institutions:

- Centre for Higher Education Studies
- Czech-Moravian Confederation of Trade Unions (ČMKOS)
- Czech Chamber of Commerce
- Regional Authority of the Ústí Region
- Masaryk University
- Ministry of Labour and Social Affairs
- Ministry of Education, Youth and Sports
- National Institution of Technical and Vocational Education (NÚOV)
- Czech Confederation of Commerce and Tourism
- Confederation of Industry of the Czech Republic

The EQF Implementation Working Group of the National Council for Qualifications

- Center for Higher Education Studies
- Ministry of Labour and Social Affairs
- Ministry of Education, Youth and Sports
- National Institution of Technical and Vocational Education (NÚOV)
- Council of Higher Education Institutions
- Confederation of Industry of the Czech Republic

Members of the editorial board for the completion of a national reference report

Name and Surname	Position and Institution
Ing. Pavel Chejn	secretary of the Commission for Collective Bargaining, Czech Association of Energy Sector Employers
Ing. Jaromír Janoš	executive director of TREXIMA, spol. s.r.o., Zlín
RNDr. Miroslav Kadlec	head of the Department for Social Partnership and Qualifications, NÚOV
PaedDr. Jaromír Krejčí	director of the Education System Division – 20, Ministry of Education, Youth and Sports (MŠMT)
Ing. Martin Krejza	executive director of the Education Section, group II, MŠMT (since December 2010)
Mgr. Jan Mareš	head of the Secondary School of Energy and Civil Engineering (currently mayor of the town of Chomutov)

[27] Further information can be found and inquieries may be made at http://www.nuov.cz/eqf.

Mgr. Dušan Martinek	manager of the Department for Human Resources Development and Project Management, Czech Confederation of Trade Unions (ČMKOS)
Mgr. Jiří Nantl, LL. M.	director of the Division for Higher Education – 20, MŠMT (since December 2010)
Ing. Jaroslava Nekvasilová	head of the Consulting and Education Department, Agrarian Chamber of the Czech Republic
RNDr. Miroslav Procházka, CSc., chair	director of NÚOV
Ing. Miloš Rathouský	director of the Division of Secondary and Higher Vocational Education – 23, MŠMT (until November 2010)
RNDr. Vladimír Roskovec	deputy director Center for Higher Education Studies (CSVŠ)
Mgr. Josef Slovák	member of the Zlín Regional Council, responsible for education, youth and sports
RNDr. Věra Šťastná	Rector's Office, Charles University
doc. Ing. Václav Vinš	director of the Division for Higher Education – 20, MŠMT (until November 2010)

II. List of meetings related the referencing process during 2009 - 2011

Meetings of various units within the EQF Coordination Point

Meetings of the NCP CZ Advisory Group

The advisory group primarily communicates and shares information in electronic format. Members of the advisory group are informed of the results of business trips abroad related to the group's activities, in detail and without delay. Members also receive all vocational reports on the NCP CZ's activities in electronic format in order to add any comments and opinions thereon.

13 May 2009

The meeting involved a thorough discussion of the draft Report on the Preparations for Implementing the EQF in the Czech Republic, and discussion and approval of the draft document *Qualification Levels in the National Qualifications System: Description of the levels and how they relate to the EQF*[28]. The meeting also resulted in the creation of a draft proposal for the plan of the NCP CZ's activities, and discussion of the possible courses of further action, with regard to the expected actions of the European Commission.

[28] Document *Qualification Levels in the National Qualifications System: Description of the levels and how they relate to the EQF*, MŠMT, Executive Committee no. 1, 5 January 2010

1 December 2009

Members of the group met as a part of the Field Groups meeting. The advisory group discussed the current draft of descriptors 5-8, referencing of qualifications to these levels, and further course of action. The group was informed of the activities of the European network of national coordination points, and presented with a *Report on the Activities of the NCP CZ*, as well as a proposal for the members of the team of authors commissioned with completing the referencing report for the Czech Republic.

Meetings of the National Council for Qualifications EQF Implementation Working Group

10 February 2009

The working group was established within the National Council for Qualifications as a board for discussing EQF issues and EQF's relation to the NSK. The constituent meeting of the working group discussed its statute and rules of procedure, as well as the scope of the working group's authority. Members were informed of the development of EQF within the EU, and the current state of its implementation in the Czech Republic. The working group has decided to focus on NSK levels and their referencing to the EQF, preparation of the report on EQF implementation in the Czech Republic, and possible connections to ECVET.

28 May 2009

The working group was informed of the criteria and procedures for referencing the national qualification levels to the EQF. The working group discussed a report on the preparations for implementing the EQF in the Czech Republic, as well as the document *Qualification Levels in the National Qualifications System: Description of the levels and how they relate to the European Qualifications Framework*, which was subsequently presented to the National Qualifications Council and the Executive Committee of the Ministry of Education. The working group also discussed the current state of development of the ECVET instrument, and the plan of NCP CZ's activities for 2009.

Pursuant to this meeting, the working group has decided to further monitor the development of rules for referencing qualifications within the EU. In subsequent meetings, the group has decided to focus on qualification levels in the Czech Republic, especially with regard to EQF levels 5-8, as related to tertiary vocational education.

24 November 2009

Pursuant to the recommendation of the Executive Committee of the Ministry of Education, and decision of the minister, Miroslava Kopicová, the document *Qualification Levels in the National Qualifications System: Description of the levels and how they relate to the European Qualifications Framework* was divided into two parts. Levels 1–4 were approved as proposed, with levels 5–8 to be defined jointly within the NQF and Q-RAM projects by the end of 2009. The working group was informed of the current draft of levels 5 – 8 and the subsequent procedure. The working group was informed of the activities of the European network of national coordination points, and presented with a *Report on the Activities of NCP CZ*, as well as a proposal for the

members of the team of authors commissioned with completing the referencing report for the Czech Republic.

Joint meetings of the advisory group and the group for EQF implementation of the National Council for Qualifications, and other stakeholders
26 April 2010
The workshop was designed for members of all groups of the NCP CZ, other stakeholders, and education and qualifications experts (representatives of the Ministry of Education, Ministry of Labour and Social Affairs, Centre for Higher Education Studies, the Research Institute of Education, Q-Ram project, employers and NÚOV – 35 participants in total).

The participants discussed various unclear issues concerning the process of referencing qualification levels to the EQF; and presented and discussed the current results of project LLP LdV EQF-Ref, as well as the development of the referencing process in the project partner countries.

The participants also discussed the formulation of NSK descriptors, and the newly created descriptors for tertiary education, resulting in a proposal that both frameworks, *i.e.* NSK descriptors for levels 5–8 and the Q-Ram descriptors (short, 1st, 2nd and 3rd cycle), be aligned and be made to correspond to EQF levels 5–8.

1 July 2010
This was the opening seminar of the NCP-EQF project, which included the referencing process and the creation of this referencing report. It was attended by members of all units of the NCP CZ, and other representatives of the state administration (especially MŠMT), as well as social partners. The workshop presented the goals and timetable of the NCP-EQF project, primarily funded from an EC grant; it also presented relevant international activities (LOG – Learning Outcomes Group, LLP LdV project EQF-Ref), as well as the development and classification of descriptors of NSK and Q-Ram levels.

Meeting of the representatives of MŠMT, NUOV and the projects Q-RAM and NSK2
7 September 2009
The meeting focused on presenting the opinions and attitudes of all parties involved, and finding a possible basis for defining levels corresponding to levels 5–8 of the EQF. Representatives of tertiary education expressed some reservations regarding the NSK descriptors for levels 5–8, and promised to modify the descriptors by the end of 2009 in order for them to meet the needs of tertiary education, to allow the adoption of descriptors for all NSK levels in January 2010.

27 May 2010
This was a follow-up meeting to the workshop of 26 April 2010, and involved a limited circle of representatives of various parties. The pre-defined agenda included the future shape of a comprehensive national qualifications framework, vocational qualifications on level 6 and higher, preparation of the referencing report, and coordination of cooperation between the projects NSK2 and Q-RAM.

Meetings of NUOV management and the NUOV Working Group regarding the referencing process

7 April 2010

The institute management and vocational qualifications experts focused on the issue of a national qualifications framework, discussing whether the NSK (or its level descriptors) really is such a framework, as well as the different understanding of various terms in the Czech Republic and the EU. The meeting also presented and discussed the current state of the referencing process in Europe. It was decided that a decision would be taken on the modification or broadening of NSK descriptors to include the results of general and/or tertiary education only after the publication of the descriptors for tertiary education, formulated by the Q-RAM project. The descriptors await approval, and their publication has been promised in the near future.

Workshop on activity A1 of the NCP-EQF project, focusing on general education

8 November 2010

The workshop presented a study completed within the NCP-EQF project to experts, which proposed the referencing of qualifications obtained in general education to the EQF levels. The study included a description of general education learning outcomes for NQF levels 1–4 (which correspond to EQF levels 1–4), and comparative analysis with the EQF descriptors used as a base for referencing the qualifications. Qualifications were referenced on the basis of core curricula (RVP), which are described in terms of learning outcomes. The procedure proposed by the authors was approved; however, the experts present recommended making the terms used and the structure of learning outcomes conform to European usage. To that end, they proposed continuing the dialogue with representatives of other education sectors, especially with the developers of the tertiary education qualifications framework (the Q-RAM project).

Workshop on activities A3 and A4 of the NCP-EQF project, focusing on tertiary education

9 November 2010

The workshop presented a study on quality assurance in tertiary education, and a study on tertiary education to all parties involved, both of which were used as source material for the referencing report. The study on tertiary education proposed referencing the qualifications awarded in tertiary education to EQF levels. International experts were present to discuss both studies.

Meetings of the report's editorial board

5 October 2010

The first meeting of the editorial board for the national report referencing qualification levels to the EQF discussed the proposed structure, based on international experience and comparison (participation of representatives of the EQF Coordination Point [NCP CZ] in the project LLP LdV EQF-Ref), as well as the prerequisites for the referencing process in the Czech Republic. The meeting discussed the various sections of the report and certain amendments and additions proposed.

7 December 2010

The second meeting of the editorial board discussed the first draft of the report. Members were presented with source studies completed by the project NCP-EQF (on tertiary education; on stating the relevant EQF level in all qualification documents; on quality assurance in education). They discussed terminology and its consistent usage, which is crucial for the comprehensibility of the report, as well as all of the comments made by international experts during their visit to Prague on 8 and 9 November 2010.

25 January 2011

The third meeting of the editorial board discussed the second draft of the national referencing report in detail. Participants discussed the proposed changes in structure, as well as the level of detail and objectivity of each chapter. The meeting adopted a resolution which summarised all points discussed, instructed the authors to make specific modifications to the report, and defined a detailed timetable for the creation, approval and translation of the report.

22 March 2011

The fourth meeting of the editorial board took place after the international conference on the Czech referencing process and dealt with the comments of the national and international experts. All seventeen points raised by the international experts were discussed and accepted where possible. The discussion of the comments of the national reviewers proceeded similarly. All proposed changes were listed in the minutes of the meeting along with a timetable for the completion of the report.

International conference on the Czech referencing process
Survey of the conference participants on the results of the referencing process
11 March 2011 Prague, Hotel Pyramida

More than a hundred representatives from a wide range of organisations, schools and social partners took part in the conference. In the opening addresses, Jiří Nantl, director of the Department of Higher Education of the Ministry of Education, and Jakub Stárek, director of the Department of Vocational Tertiary Education and Continuing Education, emphasised the importance of this step in the implementation of the EQF in the Czech Republic.

The authors of the report then presented its goals and structure, the procedure decided upon for the referencing process and its results. The international experts and the national reviewers presented their views.

The conference participants received a questionnaire on the content and form of the referencing report. The same questionnaire was sent electronically to all participants, along with a draft version of the report. The returned questionnaires confirmed the stakeholders' broad agreement with the results, as there were no objections to the results of the process or to the justifications given in the referencing report.

Seminar in conjunction with the project Bologna Experts 2009-2011
13 April 2011

Representatives of the Ministry of Education (Higher Education Department), the Czech NCP, the project NSK2 and Charles University gave presentations to representatives of higher education institutions on the Czech EQF implementation process, its similarities and differences with the Bologna Process, the results of the referencing process, the current state of the implementation of the NSK (project NSK2) and the qualifications framework for tertiary education (project Q-Ram) and proposed changes to the legislation on higher education institutions.

Seminars for employers' representatives and regional job centres, funded by the project NCP-EQF

30. 3. 2011, Zlín; **6. 4. 2011**, Nymburk; **13. 4. 2011**, Brno; **15. 4. 2011**, Plzeň; **20. 4. 2011**, Prague; **27. 4. 2011**, Hradec Králové; **29. 4. 2011**, Jihlava

The NCP CZ, in cooperation with regional education centres, organised seven seminars presenting the basic principles of the EQF, the results of the referencing process and the implications of EQF implementation for the labour market. Each seminar was attended by 15–20 participants from employers, job centres and schools. Surveys of seminar participants showed general interest in the results of the referencing process.

III. Referencing of qualification levels – evidence for relating to the Czech qualification levels and the EQF

III. 1 Referencing of qualification levels in primary and secondary education

III. 1. 1 Level 1: Special basic education

Special primary and lower secondary (elementary/basic) education is provided by special basic schools. These provide education using the curriculum for special schools (RVP ZSŠ) to students whose intellectual capacity is not sufficient for meeting the requirements included in regular curriculum for primary and lower secondary education (RVP ZV) or curriculum for primary and lower secondary education for students with mild mental disabilities (RVP ZV-LMP), and allow them to attain basic knowledge, skills and habits in suitable conditions and under special pedagogical care. Upon completion of primary and lower secondary special education students will achieve the level of key competences corresponding to their abilities.

Table 6: Key competences of special basic school graduates

Expected key competences of special basic school graduates	**EQF 1** Knowledge – K Skills – S Competence - C
Learning competences Students are able to: • master the basics of reading, writing and arithmetic, and utilize these skills for continuing education; • use textbooks, learning materials and tools; • maintain adequate learning habits, strive to focus on learning; • be motivated by commendation to continuing learning, interested in attaining new knowledge; • utilize terms, signs and symbols in relation to specific everyday situations; • have attained basic computer skills; • utilize the experience attained in practical situations.	1K – basic general knowledge 1S – basic skills required to carry out simple tasks
Problem solving competences Students should able to: • solve problems to the best of their ability; • handle familiar and repeating situations, based on imitation and their own experience; • identify problem situations and solve them based on learned stereotypes and attained experience; • not be discouraged by failure when trying to solve a problem; • know to whom to turn for help with solving a problem.	1S – basic skills required to carry out simple tasks 1C - work or study under direct supervision in a structured context
Communication competences Students should able to:	

• communicate with others to the best of their ability; • understand what is being said to them and react to the best of their ability; • master the basics of written communication; • utilize standard information and communication tools; • utilize these communication skills to establish relationships necessary for integration into society; • express their feelings, emotions and moods in a suitable manner; • understand simple, standard texts, records and images; • express their attitudes and opinions, and defend them in a suitable manner;	1S – basic skills required to carry out simple tasks 1K – basic general knowledge
Social and personal competences Students should able to: • understand the basics of interpersonal relationships; • find their way in the environment they live in; • participate in simple social activities; • utilize the basic principles of social conduct; • identify inappropriate and risky behaviour, and understand its possible consequences; • be aware of the danger of possible physical and psychological abuse of their own person; • demonstrate self-confidence when behaving in an unknown environment; • establish and maintain relationships with their peers, respect others.	1S – basic skills required to carry out simple tasks
Civic competences Students should able to: • utilize the habits and skills learned to integrate themselves into society; • be aware of basic civil rights and obligations; • adhere to the basic social standards and rules for coexistence; • protect their own health, maintain the learned healthy habits and protects the environment; • react appropriately in crisis and in life- or health-threatening situations, in accordance with instructions issued by authorised persons.	1K – basic general knowledge 1C - work or study under direct supervision in a structured context
Work competences Students should able to: • master basic sanitary habits, attend to their basic needs to the best of their ability; • have mastered basic work skills, be familiar with the procedures and operations required for performing simple jobs; • focus on performing a job and persist until a task is completed; • follow a learned work procedure, perform simple tasks according to instructions;	1S – basic skills required to carry out simple tasks 1C - work or study under direct supervision in a structured context

• respect the rules of teamwork and contribute to the quality of joint work; • accept criticism of their work performance; • adhere to the principles of work safety, health protection, sanitary and environmental standards in their job performance, based on learned stereotypes.	

When comparing the learning outcomes defined as key competences to EQF descriptors on level 1, we find congruencies in all three areas. As far as **knowledge** is concerned, EQF requires "basic general knowledge". This corresponds with the expected learning result: "students master the basics of reading, writing and arithmetic, and utilize these skills for continuing education (see learning competences)"; or "students are aware of their basic civil rights and obligations" (civic competences). The basic **skills** required for performing simple tasks, which are a prerequisite for obtaining level 1, are included in all key competences, *e.g.* "students attain basic computer skills; utilize the experience attained in practical situations" (learning competences); "handle familiar and repeating situations, based on imitation and their own experience" (problem solving competences); "understand what is being said to them and react to the best of their ability" (communication competences); "participate in simple social activities, utilize the basic principles of social conduct" (social and personal competences); "master basic work skills, be familiar with the procedures and operations required for performing simple jobs; focus on performing a job and persist until a task is completed" (work competences). **Competence** requirements are especially fulfilled by the work competences: "follow a learned work procedure, perform simple tasks according to instructions; respect the rules of teamwork and contribute to the quality of joint work".

III. 1. 2 Level 2: Primary and lower secondary (basic) education, upper secondary education (KKOV categories C and J); upper secondary education with Apprenticeship Certificate (two year programmes in category E)

Description of the core curriculum (RVP ZV)[29] for primary and lower secondary education (basic education)

- Basic education is designed to help students form and develop key competences, and provide them with the solid basics of general education, focusing especially on real-life situations and practical actions. Basic education therefore strives to fulfil the following objectives:
- allow students to master learning strategies and motivate them to lifelong learning,
- encourage creating thinking, logical thought and problem solving in students,

[29] English version available at http://www.vuppraha.cz/wp-content/uploads/2009/12/RVP_ZV_EN_final.pdf

- encourage students to adopt a versatile, effective and open style of communication,
- develop the students' ability to cooperate, respect other's work and achievements as well as their own,
- prepare students for acting like independent, free and responsible individuals, asserting their rights and fulfilling their obligations,
- develop the students need to express positive feelings in their conduct, behaviour and handling of everyday situations; develop their perceptiveness and sensitivity toward other people, nature and environment,
- teach students how to develop, protect, and take responsibility for their physical, mental and social well-being,
- teach students tolerance and consideration for other people, their cultural and spiritual values, teach them to coexist with others,
- help students to discover and develop their abilities based on realistic possibilities, and apply those abilities, as well as acquired knowledge and skills, when making decisions regarding their personal and professional goals.

The content of the curriculum RVP ZV is understood as a means to attain activity-based expected outcomes which are then interconnected to create a framework for an effective, comprehensive utilization of the skills and knowledge acquired on the key competence level. The entire curriculum and activities carried out in a school must be focused on the formation and development of key competences.

Key competences in the basic education stage include the following: learning competences; problem solving competences; communication competences; social and personal competences; civic competences; work competences.

Table 7: Key competences of basic school graduates

Expected key competences of basic school graduates	**EQF 2** Knowledge – K Skills – S Competence - C
Learning competences Students should able to: • operate with commonly used terms, signs and symbols; put things into context; connect knowledge from various fields into broader units, and use these to create a more complex perspective on mathematical, natural, social and cultural phenomena; • select and utilize suitable techniques, methods and strategies for effective learning; plan, organize and manage their own learning; be willing to pursue further studies and engage in lifelong learning; • search for and classify information, understand, interconnect and systemise them and utilize them effectively in their learning process, creative activities, and practical life;	2K – basic factual knowledge of a field of work or study 2S – basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve

identify obstacles or problems preventing them from learning; is able to plan the way of improving his/her learning; critically assesses their learning outcomes and discuss them; • conduct independent observations and experiments, compare the results obtained, assess them critically and infer conclusions which they can utilize in the future.	routine problems using simple rules and tools
Problem solving competences Students should able to: • be aware of various problem situations both at school and elsewhere; identify and understand a problem; think of discrepancies and their causes; consider and plan a way of solving problems using their own judgment and experience; • search for information suitable for solving a problem, identify their identical, similar and differing attributes; utilize the knowledge and skills attained to identify various solution alternatives; not to be discouraged by possible failure and persist in looking for an ultimate solution to a problem; • solve problems independently; choose suitable solutions; utilize logical, mathematical and empirical methods to solve problems; • verify correct problem solutions in practice, and utilize proven methods in solving similar or new problem situations; monitor their own progress in overcoming problems; • be capable of critical thinking and making judicious decisions; be capable of defending those decisions; be aware of the responsibility for their own decisions, and be capable of assessing the consequences of their actions.	2S – basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools
Communication competences Students should able to: • formulate and express thoughts and opinions in a logical sequence; express themselves precisely, coherently and literately, both in speech and writing; • understand various types of texts, records and images, commonly used gestures, sounds and other means of communication and providing information, analyse them, react to them and utilize them creatively for their own development and active involvement in social activities; • utilize information and communication tools and technologies for good and effective communication with the outside world; • listen to what other people say, understand them and reacts suitably; join a discussion effectively, defend their opinion and present appropriate arguments; • utilize the communication skills attained to establish relationships necessary for quality coexistence and cooperation with other people.	2S – basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools
Social and personal competences Student is able to: • effectively cooperate in a group; together with their teachers participates in creating the rules of team work; contribute	

positively to the quality of joint work based on their knowledge or by accepting a new role in the work process; • contribute to a good atmosphere in a team; help establish good interpersonal relationships based on thoughtfulness and respect in the treatment of others; provide help or ask for it if needed; • contribute to a debate within a small group or an all-class discussion; understand the necessity of effective cooperation with others in completing a task; appreciate other people's experience; respect various viewpoints and learn from other people's thoughts, opinions and actions; • create a positive self-image which boosts self-confidence and individual development; control and handle their actions and behaviour in order to achieve the feeling of self-satisfaction and self-respect.	2C – work or study under supervision with some autonomy
Civic competences Students should able to: • respect other people's opinions and inner values; empathise with others; disapprove of oppression and violence; be aware of their obligation to stand up to physical and mental violence; • understand the basic principles underpinning laws and social norms; be aware of their rights and obligations at school and elsewhere; • make responsible decisions based on a given situation; provide effective help to the best of their ability; act responsibly in crisis and life- or health-threatening situations; • respect, protect and value our traditions, cultural and historical heritage; express positive attitude toward works of art, show an appreciation for culture and creativity; be actively involved in cultural and sports events; • understand the basic environmental issues and problems; respect the need for a healthy environment; make decisions based on the need to protect and support health and sustainable development within society.	2C – work or study under supervision with some autonomy
Work competences Students should able to: • use materials, tools and equipment safely and effectively; observe the prescribed rules; fulfil their responsibilities and obligations; adapt to new or changed work conditions; • strive to achieve the best work results based on their quality, functionality, economic efficiency and social importance, while protecting their own health and the health of others, protecting the environment as well as cultural and social values; • utilize knowledge and experience attained in various fields of study for their own development and preparation for a future career; make informed decisions regarding their future education and professional focus;	2S – basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools 2C – work or study under supervision with some autonomy

• be aware of the basic activities required to accomplish and implement a business plan; understand the nature, goals and risks of business; develop his/her business sense.	

As far as **knowledge** is concerned, EQF requires "basic factual knowledge of a field of work or study". The learning competences cover this requirement sufficiently; however, with regard to the goals of basic education, they refer especially to elementary knowledge in a given study field, such as "search for and classify information, are capable of understanding, interconnecting and systemizing them, and utilize them effectively in their learning process".

Based on an assessment of key competences and identification of the knowledge involved therein, we may conclude that students who have completed basic education **are able to link the knowledge attained to their own experience, and develop it further during the learning process**. This meets the knowledge requirements for EQF level 2.

Skills are described in the EQF as the "basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools". This requirement is fulfilled by all problem solving competences (*e.g.* "search for information suitable for solving a problem, identify their identical, similar and differing attributes; utilize the knowledge and skills attained to identify various solution alternatives; solve problems independently; choose suitable solutions; utilize logical, mathematical and empirical methods to solve problems;" see above), as well as some of the communication competences (*e.g.* "are able to formulate and express their thoughts and opinions in a logical sequence; express themselves precisely, coherently and literately, both in speech and writing; understand various types of texts, records and images, commonly used gestures, sounds and other means of communication and providing information; utilize information and communication tools and technologies for good and effective communication with the outside world," see above). In summary, as far as the skills area is concerned, students who have completed basic education **are able to apply the techniques and skills learned to solve problems in various areas, use information effectively and utilize it both in the learning process and in everyday life**. Basic education thus corresponds to level 2 of the EQF in the skills area.

Terminological correspondence between learning outcomes in basic education and level 2 of the EQF is in the **competence** area (competence is described in terms of responsibility and autonomy in the EQF): "work or study under supervision with some autonomy". Work under supervision is not explicitly listed in the key competences attained by basic education, but selected definitions included under key social competences are a sufficient proof of the direct link to level 2 of the EQF: "are capable of effective cooperation in a group; together with their teachers, participate in creating the rules of team work; contribute positively to the quality of joint work based on their knowledge or by accepting a new role in the work process; contribute to a debate

within a small group or an all-class discussion; understand the necessity of effective cooperation with others in completing a task; appreciate other people's experience; respect various viewpoints and learn from other people's thoughts, opinions and actions", as well as communication competences: "listen to what other people say, understand them and react suitably; join a discussion effectively, defend their opinion and present appropriate arguments", and civic competences: "understand the basic principles underpinning laws and social norms; are aware of their rights and obligations at school and elsewhere".

Description of curricula of category C: One-year Practical School and Two-year Practical School (for graduates of special basic education)

The one-year practical school curriculum (RVP SV) has been designed for students with severe mental retardation, multiple handicaps and autism who have completed primary and lower secondary special education in special basic schools based on the educational programme designed for this student group (curriculum RVP ZSŠ, Part 2). One-year practical schools complement and expand the students' theoretical and practical skills attained during compulsory education. The education process respects the students' individual traits and abilities, and focuses on developing their communication skills and helping them attain maximum possible self-reliance and independence of the care of others. It prepares students for mastering manual skills and simple activities utilizable in practical life that will facilitate the students' integration into society. The objective of education in a one-year practical school is to improve the graduates' quality of life; depending on their individual abilities, it offers them the possibility to perform adequate tasks at sheltered workplaces, as well as hold simple jobs in various professional fields.

The two-year practical school programme offers upper secondary education to students with moderate mental retardation, or students with a mild mental retardation combined with another physical handicap which prevents them from studying at any other type of upper secondary school.

Two-year practical schools complement and expand the general education attained during compulsory education. The education process focuses on developing basic work skills, habits and procedures required in everyday and professional life. It teaches the students basic vocational and manual skills in various disciplines, which help students obtain a professional occupation. Students may also utilize the skills obtained for further studies.

Taking into account the nature of the above two programmes and their specific social function, the learning outcomes of the one-year/two-year practical school graduates have been referenced to level 2 of the EQF.

Description of programmes in categories J and E

Curricula for two-year educational programmes in categories J and E define key and professional competencies for their graduates. This education level follows basic

education, and develops the following key competences: learning competences, problem solving competences, communication competences, personal and social competences, civic competences and cultural awareness, professional and business competences, mathematical competences, IT and communication competences, and competences for working with information.

The key competences build on and further develop the competences attained at basic school level. Compared to level 2 of the EQF, learning outcomes definitions show a **shift toward EQF level 3**, especially as far as **skills** and **knowledge** is concerned, for example in the learning competences – students: "master adequate learning techniques; set up a suitable study routine and conditions; work with a text, search for and process information; comprehend an oral speech (*e.g.,* a presentation, lecture, speech, etc.); take notes; utilize various sources of information for learning, including their own and others' experience; monitor and evaluate their own progress in achieving the desired learning outcomes, accept other people's assessment of their results; **are aware of continuing education possibilities, especially as regards their preferred field of study and/or occupation"**. Similarly, the descriptions of problem solving and communication competences include the definition of learning outcomes, which rather correspond to EQF level 3, such as: "students express themselves adequately given the communication purpose and situation, both in speech and writing; present themselves suitably in formal situations (*e.g.* job interviews, dealing with authorities, etc.); express their thoughts coherently; correctly and clearly process reasonably difficult texts dealing with standard specialised topics, professional and other documents (applications and submissions to official institutions, employers etc., structured CV's, forms to fill out, etc.)."

The referencing of qualifications attained by completing study fields in category J and two-year study fields in category E is determined by comparing the competences describing responsibility and independence in the curricula to descriptors for levels 2 and 3, describing **competence** in the EQF. Whereas level 3 requires that learners "take responsibility for completion of tasks in work or study", the expected education outcomes, defined as professional competences, require that students "are capable of performing activities under supervision", which corresponds to EQF level 2 in the competence area.

The degree of responsibility and independence achieved is higher for graduates of two-year study fields in category E, whose professional competences qualify them to perform simple activities independently, even with a certain degree of responsibility, such as: "receive and prepare raw materials for further processing; process raw materials and products in their department; follow a prescribed technological procedure; operate equipment and machinery, perform their cleaning and regular maintenance". Considering that graduates of two-year study fields in category E are expected to perform simple servicing or auxiliary work, the level of such qualifications has been referenced to EQF level 2.

III. 1. 3 Level 3: Upper secondary education with Apprenticeship Certificate – (category H, three year programmes in category E)

Curricula for vocational education (RVP OV) define key and professional competences which constitute the requirements for a graduate in a given study field.

Education in all areas of vocational education focuses on helping the students acquire, and building on their basic education, develop the following key competences: learning competences, problem solving competences, communication competences, personal and social competences, civic competences and cultural awareness, professional and business competences, mathematical competences, IT and communication competences, and competences for working with information.

Table8: Key competences of graduates of upper secondary education with an Apprenticeship Certificate

Expected key competences of graduates of upper secondary education with an Apprenticeship Certificate (programmes in category H, three year programmes in category E)	**EQF 3** Knowledge – K Skills – S Competence - C
Learning competences *Education is geared toward helping students study effectively, evaluate the results and progress achieved and set realistic goals and identify needs for subsequent learning.* Students should be able to: • have a positive attitude toward learning and education; • master various learning techniques, set up a suitable study routine and conditions; • utilize various methods of working with texts (especially study and analytical reading); • search for and process information effectively; • understand oral speech (*e.g.* a presentation, lecture, speech, etc.); take notes; • utilise various sources of information for learning, including their own and others' experience; • monitor and evaluate their own progress in achieving the desired learning outcomes, accept other people's assessment of their results; • monitor and evaluate their own progress in achieving the desired learning outcomes, accept other people's assessment of their results.	3K – knowledge of facts, principles, processes and general concepts, in a field of work or study 3S – a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information
Problem solving competences *Education is geared toward helping students to be able to handle common work- and non-work-related problems.* Students should be able to: • understand their assignment or identify the nature of a problem; obtain information necessary for solving the problem; suggest a possible solution or solution alternatives and justify them; assess and verify the correctness of the method chosen and the results obtained;	3C - take responsibility for completion of tasks in work or study adapt own behaviour to circumstances in solving problems

• utilise various thought techniques and mental operations for solving problems; • choose tools and methods (instruments, study literature, procedures and techniques) suitable for performing various activities; utilize previously gained knowledge and experience; • cooperate with others in solving problems (team solutions).	3S – a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information
Communication competences *Education is geared toward helping students to be able to express themselves in various learning, everyday and professional situations, both in speech and writing.* Students should be able to: • express themselves adequately given the communication purpose and situation, both in speech and writing; and present themselves suitably; • express their thoughts coherently and clearly, in an orderly and grammatically correct manner if done in writing; • participate actively in discussions, formulate and defend their attitudes and opinions; • process standard administrative and work-related documents; • attain the linguistic capability required for basic professional activities depending on the requirements and nature of their respective qualification (*e.g.,* understand the basic technical terms and work instruction, both in speech and writing); • strive to adhere to linguistic and stylistic norms and technical terminology; • record important thoughts and data from texts or speeches in writing; • express and conduct themselves in accordance with the principles of cultured conduct and demeanour; • attain the linguistic capability required for basic communication in a foreign environment, at least in one foreign language; • understand the advantages of mastering foreign languages both in everyday and professional environment; be motivated to improve their language skills.	3S – a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information
Personal and social competences *Education is geared toward helping students to be able to set realistic personal development goals, based on their self-knowledge; maintain their health, cooperate with others and contribute to establishing quality interpersonal relationships.* Students should be able to: • assess their physical and mental possibilities realistically; estimate the results of their actions and behaviour in various situations; • set goals and priorities based on their individual capabilities, interests, professional focus and living conditions; • react adequately to others' appraisal of their conduct and behaviour, accept advice and criticism;	3C - take responsibility for completion of tasks in work or study adapt own behaviour to circumstances in solving problems

• verify the knowledge obtained, assess the opinions, attitudes and actions of other people realistically; • adopt a responsible attitude toward maintaining their health, strive to achieve physical and mental development, be aware of the consequences of unhealthy lifestyle and addictions; • be able to adapt to changing living or working conditions, and influence them positively to the best of their ability; be prepared to handle their social and economic issues; achieve financial literacy; • work in a team and participate in joint work and other activities; • accept and perform assigned tasks in a responsible manner; • stimulate team work by their own suggestions for improving their work and task solution; assess the suggestions of others in an unbiased manner; • contribute to establishing helpful interpersonal relationships, prevent personal conflicts, resist succumbing to prejudice and stereotypes in their approach to others.	3K – knowledge of facts, principles, processes and general concepts, in a field of work or study
Civic competences and cultural awareness *Education is geared toward helping students to accept and adhere to the values and attitudes important for a life in democratic society; act in accordance with the principles of sustainable development; and support national, European and world cultural values.* Students should be able to: • act responsibly, independently and proactively, both in their own and public interest; • observe the law, respect the rights and individualities of others (as well as their cultural differences), stand up against intolerance, xenophobia and discrimination; • act in accordance with moral principles and the principles of social conduct, contribute to enforcing democratic values; • be aware of their own cultural, national and personal identity (as a part of a pluralistic, multicultural coexistence); show active tolerance toward the identity of other people; • show active interest in the political and social events in their own country and elsewhere; • understand the importance of environment for humankind, act in accordance with the principles of sustainable development; • recognise the value of life, accept the responsibility for their own life, and joint responsibility for preserving the life and health of others; • respect the traditions and values of their own nation, be aware of its past history and current position in European and world context; • support and adopt a positive attitude toward the local, national, European and world cultural values.	3C - take responsibility for completion of tasks in work or study adapt own behaviour to circumstances in solving problems
Professional and business competences *Education is geared toward helping students to take maximum advantage of their personal and professional assets to succeed on the*	

labour market, to build and develop their career as well as the need for lifelong learning. Students should be able to: • adopt a responsible attitude toward their own professional future and education; be aware of the importance of lifelong learning, and be prepared to adapt to changing labour conditions; • be aware of all career possibilities in their field on the labour market; choose their future professional and educational path thoughtfully and responsibly; • have a realistic idea of the labour, wage and other conditions, as well as the employers' requirements in their field, and be able to compare them with their ambitions and assets; • obtain and evaluate information on work and education opportunities; use consulting and agency services, both on the labour market and in education; • communicate appropriately with potential employers; present their professional potential and goals; • know the general rights and obligations of employers and employees; • understand the nature and principles of business; be aware of the legal, economic, administrative, personal and ethical aspects of doing business; • search for and assess business opportunities, based on an actual situation on the labour market, their own assets and other possibilities.	3C - take responsibility for completion of tasks in work or study adapt own behaviour to circumstances in solving problems 3S – a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information 3K – knowledge of facts, principles, processes and general concepts, in a field of work or study
Mathematical competences *Education is geared toward helping students to be able to utilize mathematical skills in various life situations.* Students should be able to: • be able to use and convert standard measurement units correctly; • utilize quantification concepts; • read various graphic representations (tables, diagrams, graphs, charts, etc.); • give a realistic estimate of the result when solving a problem; • find relationships between objects and effects when solving practical tasks, be able to describe them and utilize them for a given solution; • apply the knowledge of the basic shape of objects and their mutual relationships on a plane and in space; • apply mathematical methods for solving practical tasks in everyday situations.	3K – knowledge of facts, principles, processes and general concepts, in a field of work or study 3S – a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information
IT and communication competences, competences for working with information *Education is geared toward helping students to be able to use a personal computer and its basic software and applications, as well as*	

other IT tools, utilize adequate sources of information and work with them effectively. Students should be able to: • use a personal computer and other information and communication technology tools; • use standard software and applications; • learn to use new applications; • communicate by e-mail and use other means of online and offline communication; • obtain information from open sources, especially using the Internet; • work with information from various sources recorded on various media (print, electronic and audio-visual media), utilizing various IT and communication technologies; • be aware of the necessity to assess the credibility of various information sources, adopt a critical approach to information obtained from such sources; achieve media literacy.	3S – a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information

As far as **knowledge** is concerned, level 3 of the EQF requires the "knowledge of facts, principles, processes and general concepts, in a field of work or study". Analysing the key competences toward which education in given fields of study is geared may demonstrate that graduates will obtain the knowledge required for EQF level 3. For example, learning competences require that "education is geared toward helping students to study effectively, evaluate the results and progress achieved, and set up realistic goals and needs for continuing learning"; the expected learning outcomes in other competences also demonstrate level 3 knowledge: "be aware of the general rights and obligations of employers and employees (professional and business competences); attain the linguistic capability required for basic communication in a foreign environment, at least in one foreign language; attain the linguistic capability required for basic professional activities depending on the requirements and nature of their respective qualification (*e.g.,* understand the basic technical terms and work instruction, both in speech and writing)" – see communicative competences above.

This argument is supported by the specific description of expected learning outcomes in the area of technical competences, which clearly require level 3 knowledge. This is demonstrated in the following description of technical competences defined in the core curriculum (RVP) for the study field Industrial Machinery Mechanic.

Table 9: Technical competences of graduates of upper secondary education with an Apprenticeship Certificate

Expected technical learning outcomes of graduates of the programme 23-51-H/01 Industrial Machinery Mechanic (category H)	EQF 3 Knowledge – K Skills – S Competence - C
Process and finish after machining (or manufacture) parts of machinery, equipment and steel structures, and assemble them. Students should able to: • manufacture, or finish after machining the above parts by manual cutting and processing, fit them together and prepare them for assembly or connecting into larger units; • connect machine and structure parts, assemble them into faultlessly functioning units and disassemble them; • utilize the required state-of-the-art tools, equipment, manual mechanized equipment, machines and appliances, mechanization tools enabling or facilitating the handling of the machine and structure parts being assembled, etc.; select such work tools independently; • treat and maintain tools, equipment and other work tools used for the above-mentioned activities, or perform modifications thereof; • measure and check the dimensions, shape, surface alignment, finish quality and other features of machine parts, required for their proper functioning in an assembly; • check the dimensions of assembled groups and sub-groups, assess and verify their proper functioning as per the design drawings; • perform operation tests of products and document the results properly; • work with engineering drawings, charts, standards, technological and other technical documentation, both in conventional and electronic format.	3S – a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information 3K – knowledge of facts, principles, processes and general concepts, in a field of work or study
Repair machinery, equipment and steel structures, perform their maintenance and servicing. Students should able to: • perform regular maintenance and servicing of machines, machinery, steel structures and other engineering products; • disassemble and reassemble machines, machinery and steel structures, and perform minor repairs, medium repairs and general overhauls; • after repair, participate in complex measurements (*e.g.* precision and/or geometry measurements, output parameter check, quality monitoring, etc.); perform operational tests; complete reports on such measurements and tests, and hand over the repaired equipment to users; • participate in the assembly of products (machines, machinery, etc.) in the users' facilities, put them into operation and perform initial adjustment; • carry out minor repairs to spare parts, using simple technological operations, such as machining and heat processing;	3S – a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information

• detect operational defects of machines and equipment, establish their causes, and select an appropriate method of their rectification and elimination of their causes; • set up a technological procedure for repairing machinery and equipment; • demonstrate to the user the operation of repaired and/or newly installed products (machinery, equipment, etc.), instruct the user about their proper operation and maintenance; • make sketches for the modification or manufacture of spare parts; propose a suitable material or raw product for their manufacture; • be prepared to pass a test in front of a commissioner; the test will cover the content of courses ZK 111 W01, or ZK 135 W01 and ZK 311 W01.	3C - take responsibility for completion of tasks in work or study adapt own behaviour to circumstances in solving problems
Operate machinery. Students should able to: • in accordance with instruction manuals, operating guidelines, etc., operate, monitor and check the functioning of simple machines and mechanical equipment in power engineering, power facilities of industrial and processing plants, sports facilities, transportation, etc. (such as plant rooms, compressor stations, central cooling, ventilation and air-conditioning equipment, water treatment plants, sewage treatment plants, etc.), unless special authorization is required for such activities; • maintain the serviceability of the above equipment by means of cleaning, maintenance, adding and replacing operating fuels and performing regular maintenance; • monitor the technical state of such equipment and repair minor defects; • maintain the prescribed documentation of the equipment's operation, technical state, defects, repairs, etc.	3S – a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information
Ensure work safety and health protection. Students are able to: • be aware that work safety is paramount for protecting their own health and that of their co-workers (and other persons present on a work site, such as clients, customers, or visitors), as well as for quality management, and a condition for obtaining or maintaining a quality certificate pursuant to relevant standards; • be familiar and comply with principal legal regulations concerning work safety, health protection, and fire prevention; • master the principles and habits of safe work, including the rules for health protection when working with image display units (monitors, displays, etc.); be able to recognize possible injury or health hazards, and to ensure the elimination of any defects and possible risks;	3C - take responsibility for completion of tasks in work or study adapt own behaviour to circumstances in solving problem 3K – knowledge of facts, principles, processes and general concepts, in a field of work or study

• be familiar with the labour health care system (including preventive care); be able to assert claims for health protection at work, claims arising from a work-related injury or damage to health; • be familiar with the principles of providing first aid in case of a sudden illness of injury, and be able to provide first aid themselves.	3C - take responsibility for completion of tasks in work or study adapt own behaviour to circumstances in solving problem
Strive to achieve the highest possible quality of their work, products or services Students should able to: • understand that quality is an important tool for achieving competitiveness and good name; • comply with the prescribed standards and regulations related to the system of quality management established at their workplace; • ensure compliance with the quality standards for processes, products or services, taking into account the clients' (customers, citizens) requirements.	
Act economically and in accordance with the strategy of sustainable development. Students should able to: • be aware of the importance, purpose and usefulness of their work, as well its financial or social value; • take into account possible costs, revenues and profit, environmental and social impact when planning and evaluating any activity (both at work and in everyday life); • manage financial resources effectively; • utilize materials, energy sources, waste, water and other substances in an effective and environment-friendly manner.	3C - take responsibility for completion of tasks in work or study adapt own behaviour to circumstances in solving problems

The above expected learning outcomes are also equivalent to learning outcomes corresponding to level 3 **skills**: "a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information"; as well as to EQF level 3 **competence**, which require that learners "take responsibility for completion of tasks in work or study, adapt own behaviour to circumstances in solving problems". Similarly as in the case of proving the correspondence of learning outcomes on level 2, terminology on level 3 is the least conclusive in the area of competence, considering the lack of a precise specification of learning outcomes, referring merely to "a responsibility for fulfilling tasks". However, at a more detailed analysis, important elements of responsibility may be found in the definition of technical competences: "ensure work safety and health protection; strive to achieve the highest possible quality of work, products or services; and act economically and in accordance with the strategy of sustainable development".

Vocational and technical competences are different for each type of programme, since they specify the technical qualification required for the graduate to be able to work in a specific position, profession, or field. The level of technical competences is comparable in all core curricula (RVP) in categories H and E (3-year), and corresponds well with level 3 of the EQF.

III. 1. 4 Level 4: Upper secondary education with Maturita exam (programmes in categories K, L, M)

III. 1. 4. 1 Secondary general education (category K)

Education at four-year gymnazia and at upper four years at six and eight year gymnazia is geared toward providing students with key competences and general knowledge, and preparing them primarily for entering university and other types of tertiary education, for choosing a profession, and for civic life in general. Gymnazia graduates should obtain a wide scope of general knowledge, they should be able to adapt to working in various fields and areas of activity, to adjust to newly emerging requirements on the labour market, and possibly to be able to work or study in a foreign country

Education at four year gymnazia and at the four last years six and eight year gymnazia is geared toward developing the following key competences: learning competences, problem solving competences, communication competences, social and personal competences, civic competences, and business competences.

Table 10: Key competences of graduates of upper secondary general education

Expected key competences of graduates of upper secondary general education (gymnazia) with Maturita exam (category K)	**EQF 4** Knowledge – K Skills – S Competence - C
Gymnazium graduates shall have obtained a wide knowledge base, and achieve the required level of key competences. **Learning competences** Students should able to: • utilize various learning strategies effectively, in order to obtain knowledge and information; seek and develop effective learning methods; evaluate their own learning and thought process; • adopt a critical approach toward sources of information; process information creatively and utilize it for their own studies and practical application; • plan and organize their own learning and work activities, use them as a means to self-fulfilment and personal development; • assess critically their own progress in achieving their learning and professional goals; accept other people's	4K - factual and theoretical knowledge in broad contexts within a field of work or study 4S - a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study 4C - exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change supervise the routine work of others, taking some responsibility for the

praise, advice and criticism; learn from their own mistakes and achievements.	evaluation and improvement of work or study activities
Problem solving competences Students should able to: • identify a problem, determine its origin, separate it into segments; • create hypotheses, propose subsequent steps, consider the possibility to utilize various methods of solving a problem or verifying a hypothesis; • utilize suitable methods, previously acquired knowledge and skills to solve problems; use analytical, critical and creative thinking, employ intuition and imagination; • weigh possible pros and cons of various solution alternatives, assess their risks and consequences; • interpret knowledge and findings obtained critically and verify it; find arguments and evidence for their assertions; formulate well-founded conclusions and defend them; • be open toward utilizing various methods of solving problems; look at a problem from various perspectives.	4S - a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study
Communication competences Students should able to: • taking into account a specific situation or parties involved, effectively utilize all available verbal and non-verbal means of communication, including symbolic and graphical expression of various types of information; • effectively utilize modern information technology; • comprehend and utilize technical terms, as well as symbolic and graphical expression of various types of information; • express themselves clearly, intelligibly and in a manner suitable for the purpose, method, intent and addressee of their message, both in speech and writing; take into consideration the experience, knowledge and assumed feelings of their communication partners; • present their own work and person in front of a known and unknown audience; • understand various types of utterances in a variety of communication situation; interpret the messages received correctly, and present relevant arguments; help to achieve understanding in unclear or disputable communication situations.	4S - a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study 4K - factual and theoretical knowledge in broad contexts within a field of work or study
Social and personal competences Students should able to: • assess their physical and mental possibilities realistically, be capable of assessing their own actions; • set goals and priorities based on their individual capabilities, interests, professional focus and living conditions;	4C - exercise self-management within the guidelines of work or study contexts that are

• predict the outcomes of their actions and conduct in various situations, and adjust them accordingly; • adapt to changing living or working conditions, and influence them actively and creatively to the best of their ability; • contribute actively to setting and achieving common goals; • help create and maintain meaningful interpersonal relationships, based on mutual respect, tolerance, and empathy; • adopt a responsible attitude toward maintaining their own and other people's health; • make decisions based on their own judgment; resist the pressure of society and the media.	usually predictable, but are subject to change supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities
Civic competences Students should able to: • make informed judgments regarding the balance between their own interests, the interests of the wider group in which they belong, and public interests; choose balanced decisions and actions; • contemplate the functioning of society and civilization with regard to sustainable development; decide and act so as not to cause harm to nature, environment or culture; • respect other people's different values, opinions, attitudes and abilities; • contemplate the connections between their rights, obligations and responsibilities; fulfil their obligations responsibly and creatively; defend their own rights and the rights of others, stand up against oppression, and enable others to exert their rights; • expand their knowledge and understanding of cultural and spiritual values, help create and protect them; • make informed and responsible decisions in a crisis or health- and/or life-threatening situations, provide help to others; • assess public events and development; keep up with local events; form and defend informed opinions, and act in the best public interest and to the best of their knowledge and conscience.	4C - exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities 4K - factual and theoretical knowledge in broad contexts within a field of work or study 4S - a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study
Business competences Students should able to: • make well thought-out and responsible decisions regarding their future education and career, taking into account their needs and abilities; • develop their personal and professional potential; identify and utilize opportunities for both personal and professional development; • act proactively, employ initiative and creativity, embrace and support innovations;	4C - exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change supervise the routine work of others, taking some responsibility for the

• strive to achieve their set goals; continuously review and critically assess the results achieved; adjust their subsequent activities with regard to the desired goal; complete all activities they take up; find motivation to achieve success; • critically assess and evaluate any risks involved in decisions regarding real-life situations, and be prepared to bear such risks if necessary; • acquire and critically assess information on educational and professional opportunities; utilize all available sources and information for planning and implementing their activities; • understand the nature and principles of business; assess possible risks; search for and critically assess business opportunities with regard to their abilities, situation on the market, and other factors.	evaluation and improvement of work or study activities 4S - a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study

Compared to the learning outcomes on level 3, the expected learning outcomes classified under the above key competences reveal a shift toward broader **knowledge**, especially theoretical. Correspondence is revealed when comparing the goals of gymnazium education: "gymnazium graduates shall have obtained a wide knowledge base, and achieve the required level of key competences" to the definition of learning outcomes on EQF level 4: "factual and theoretical knowledge in broad contexts within a field of work or study". Similarly as in basic education, this includes mainly knowledge in the given study field.

The **skills** may be found especially in learning competence: "effectively utilize various learning strategies to obtain and process knowledge and information; seek and develop effective learning methods; analyse their own learning and thought processes; assess information sources critically; process information creatively and utilize it for their own learning and practical application" and problem solving competences: "identify a problem, explain its nature, separate it into segments; formulate hypotheses, propose subsequent steps, consider utilizing various methods of solving a problem or verifying a hypothesis; utilize suitable methods, previously obtained knowledge and skills to solve a problem; use analytical, critical and creative thinking, employ intuition and imagination."

As far as the learning outcome in the field of EQF **competence** ("exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change") is concerned, correspondence may be found especially in the following learning outcomes: "adopt a critical approach toward sources of information; process information creatively and utilize it for their own studies and practical application; assess critically their own progress in achieving their learning and professional goals; accept other people's praise, advice and criticism; learn from their own mistakes and achievements" (see learning competences); "interpret knowledge and findings obtained critically and verify it; find arguments and evidence for their assertions; formulate well-founded conclusions and defend them;

be open toward utilizing various methods of solving problems; look at a problem from various perspectives" (problem-solving competences); and especially in personal and social competences: "assess their physical and mental possibilities realistically, assess their own actions; set goals and priorities based on their individual capabilities, interests, professional focus and living conditions; predict the outcomes of their actions and conduct in various situations, and adjust them accordingly; adapt to changing living or working conditions, and influence them actively and creatively to the best of their ability."

Gymnazium education primarily teaches the students to assume responsibility for their own conduct and actions – see especially the civic competences: "contemplate the functioning of society and civilization with regard to sustainable development; decide and act so as not to cause harm to nature, environment or culture; respect other people's different values, opinions, attitudes and abilities; contemplate the connections between their rights, obligations and responsibilities; fulfil their obligations responsibly and creatively; defend their own rights and the rights of others, stand up against oppression, and enable others to exert their rights"; and social and personal competences: "contribute actively to setting and achieving common goals; help create and maintain meaningful interpersonal relationships, based on mutual respect, tolerance, and empathy."

III. 1. 4. 2 Secondary vocational education (categories L and M)

Similarly as vocational training providing secondary education with an apprenticeship certificate (see level 3), core curricula for vocational disciplines providing secondary education with the Maturita certificate follow the goals prescribed for secondary vocational education[30], in that they are geared toward helping students to acquire key and technical competences, building on those acquired in basic education, and at a level corresponding to their talents and abilities. The key competences are identical for vocational programmes in categories H, L, and M. The categories differ in the level of the technical competences expected of students, which prescribe the requirements a graduate needs to meet to enter the labour market; their content is defined by the specific occupation.

We have used technical competences included in the core curriculum for the programme **23-41-M/01** ***Mechanical Engineering*** to demonstrate congruence with the descriptors for the relevant EQF level 4:

Table 11: Technical learning outcomes of graduates of the four year technical programme

[30] The concept of four pillars of education for the 21st century entails the following: learning to know; learning to do; learning to be; learning to live together, learning to live with others (Delors, J. et al., Learning: The Treasure Within)

Expected technical learning outcomes of graduates of the programme 23-41-M/01 Mechanical Engineering (category M)	EQF 4 Knowledge – K Skills – S Competence - C
Design and construct engineering components, mechanisms and machine parts, tools, equipment, devices and other manufacturing tools; select parts of building technical equipment, worksite technological equipment, etc., and design their location. Students should able to: • design basic joint types and select joining parts; design and dimension machinery parts for motion transmission, piping and fittings, and other structural elements of machinery and equipment; • create designs of simple fluid mechanisms made of standard components; • construct simple cutting tools, forming tools, devices, measuring instruments and other manufacturing tools; • select suitable materials, raw product types, prefabricated component types and sizes; choose the method of heat processing and finish for metal materials, etc.; • create subsequent structural documentation for drawings of parts and configurations; • dimension machinery parts and structures, check them for stress and deformations; • read and create drawings of parts, configuration drawings, diagrams, and other products of graphical technical communication used in mechanical engineering; be familiar with simple building drawings and simple electrical diagrams; • utilize the principles of technical normalization and standardization; solve technical tasks using standards, engineering tables, and other information sources.	4S - a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study 4K - factual and theoretical knowledge in broad contexts within a field of work or study
Design the methods, technical equipment, equipment, instruments, manufacturing tools and technological conditions for the transformation of raw materials, prefabricated components and raw products into engineering products. Students should able to: • design technological processes for manufacturing simple components, and methods of assembling simple subassemblies or products; • determine the technological conditions for cutting, shaping, heat processing, etc.; • specify the machinery, equipment, communal instruments, tools, measuring instruments and other manufacturing tools for performing various technological operations; • create programmes for performing simple operations on numerically controlled machines; • create descriptions of technological operations required to manufacture simple parts;	4S - a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study 4K - factual and theoretical knowledge in broad contexts within a field of work or study 4C - exercise self-management within the guidelines of work or study contexts that are usually

• design the basic concept of simple operating tools, equipment, measuring instruments and other manufacturing tools; • specify auxiliary and operating materials and fuels required to perform prescribed technological operations; • design the methods and conditions for controlling the quality of parts and products.	predictable, but are subject to change supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities
Design systems for the care and maintenance of machinery and equipment, methods for assessing its technical condition, and procedures for its inspections, maintenance and repairs. Students should able to: • create care and maintenance plans for machinery and equipment, in accordance with its service and operating documentation; • design the methods for determining the technical condition or detecting defects in machinery and equipment, using the relevant service documentation; • select a suitable procedure for repairing standard structural nodes and machinery/equipment assemblies; • maintain records on the operation, maintenance and repairs of machinery and equipment; • process the data required for ordering required spare parts and components for machinery/equipment.	4S - a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study
Measure basic technical quantities. Students should able to: • use gauges and measuring instruments; apply suitable methods of checking and measuring basic technical quantities; • measure length, angles, shapes, surface alignment, component alignment and finish quality; • perform tests of the mechanical properties of technical materials, and simple tests of their technological properties; test the properties of operating fuels and materials; inspect machinery and equipment components, and participate in comprehensive measurements and tests of machinery/equipment by performing partial measurements; • evaluate the results of measurements performed, complete records and reports.	4S - a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study
Utilize information and communication technologies for effective work. Students should able to: • utilize application software to support the design and construction stage of production; • utilize application software to support technological background of production; • utilize application software to support technical maintenance of machinery;	4S - a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study

• present their ideas and suggestions using information and communication technologies.	
Observe the rules of work safety and health protection. Students should able to: • be aware that work safety is paramount for protecting their own health and that of their co-workers (and other persons present on a work site, such as clients, customers, or visitors), as well as for quality management, and a condition for obtaining or maintaining a quality certificate pursuant to relevant standards; • be familiar and comply with principal legal regulations concerning work safety, health protection, and fire prevention; • master the principles and habits of safe work, including the rules for health protection when working with image display units (monitors, displays, etc.); recognize possible injury or health hazards, and to ensure the elimination of any defects and possible risks; • be familiar with the labour health care system (including preventive care); be able to assert claims for health protection at work, claims arising from a work-related injury or damage to health; • be familiar with the principles of providing first aid in case of a sudden illness of injury, and be able to provide first aid themselves.	4S - a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study 4K - factual and theoretical knowledge in broad contexts within a field of work or study
Strive to achieve the highest possible quality of their work, products or services. Students should able to: • understand that quality is an important tool for achieving competitiveness and good name; • comply with the prescribed standards and regulations related to the system of quality management established at their workplace; • ensure compliance with the quality standards for processes, products or services, taking into account the clients' (customers, citizens) requirements.	
Act economically and in accordance with the strategy of sustainable development. Students should able to: • be aware of the importance, purpose and usefulness of their work, as well its financial or social value; • take into account possible costs, revenues and profit, environmental and social impact when planning and evaluating any activity (both at work and in everyday life); • manage financial resources effectively; • utilize materials, energy sources, waste, water and other substances in an effective and environment-friendly manner.	4C - exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities

Analysis of the learning outcomes in each of the technical competences clearly shows that in order for graduates to be able to "design and construct engineering components, mechanisms and machine parts, tools, equipment, devices and other manufacturing tools; select parts of building technical equipment, worksite technological equipment, design the methods, technical equipment, equipment, instruments, manufacturing tools and technological conditions for the transformation of raw materials, prefabricated components and raw products into engineering products", etc., they need to possess "factual and theoretical **knowledge** in broad contexts within a field of work or study", and a "a range of cognitive and practical **skills** required to generate solutions to specific problems in a field of work or study" (here it applies primarily to profession, in both cases).

The **competence** for "supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities" is demonstrated more conclusively for vocational school graduates than for gymnazium graduates. Graduates of four-year vocational programmes may find jobs primarily in middle technical and economic positions (this includes, in this case, such jobs as production foreman, workshop planner, technologist, technical operations manager, etc.). All of these positions require competences for management and supervision of other people's work, as well as the corresponding level of responsibility for human resources development.

Comparing the learning outcomes on level 4 of the EQF to the key competences defined in the curriculum for gymnazium, and key and technical competences in the curriculum for four-year vocational programmes, we have established a level of congruence which allows us to reference the qualification level obtained by graduating from any of the above programmes to level 4 of the EQF.

III. 2 Referencing of the qualification levels awarded in tertiary education

Descriptions of each education level / degree in the Czech Republic are determined primarily by the relevant legal regulations. These descriptions are rather broad and general, and may be compared to the descriptors of the EQF and the qualification framework for the European Higher Education Area (QF EHEA). Therefore, it has been proposed to reference qualifications to these levels, also considering that levels 5-8 EQF and cycles 1-3 of the QF-EHEA have been recognized as compatible on the European level.[31].

[31] See the *London Communiqué: Towards the European Higher Education Area: responding to challenges in a globalised world, 18 May 2007*. [on line].
<http://www.ehea.info/Uploads/Declarations/London_Communique18May2007.pdf >.

Czech tertiary education consists of vocational and non-vocational higher education. This includes tertiary vocational education, and bachelor's, master's and doctoral programmes. For comparing the programmes' descriptions, we have used existing legal regulations, especially the Education Act (for tertiary vocational education); the Higher Education Act (for non-vocational higher education); regulations concerning accreditation requirements; and methodological documents issued by both accreditation commissions. Some requirement categories (forming opinions, communication, capability for continuing learning) appear primarily in specific study plans or Graduate Profiles.

The referencing of qualification levels is illustrated in Table 4 in Subsection 3.2.2. For each level/type of tertiary education, the table shows the degrees awarded, typical length of study, number of ECTS credits and the EQF level.

III. 2. 1 Level 6: Tertiary vocational education and Bachelor's programmes

Qualifications obtained in tertiary vocational education and bachelor's programmes are referenced to level 6 of the EQF.

All disciplines of tertiary vocational education are provided by tertiary vocational schools, pursuant to accredited education programmes. Tertiary vocational education provides an alternative for those students who desire to obtain tertiary education, but prefer a more practical curriculum with a possibility to enter the labour market immediately.

Tertiary vocational education

Basic description of tertiary vocational education is given in the Education Act: "Tertiary vocational education broadens and deepens the students' skills and knowledge obtained in secondary education, provides general and specialised vocational education and practical training for the performance of demanding specialized activities".

The definition of objectives of tertiary vocational education (TVE) is short, but specifies the single principal aspect of TVE: the preparation for performing "demanding specialised activities". All of the characteristics of level 6 may be categorised under demanding specialised activities.

Considering that current legal regulations on TVE are rather generic in formulation, the Accreditation Commission for Tertiary Vocational Education (AK VOV) has chosen to participate in the project Accreditations in Tertiary Vocational Education: Criteria and Methodology.[32] The project's outcomes included the report *Tertiary Vocational Education: Objectives and Characteristics*, which specifies the requirements for TVE more specifically, while still allowing a degree of flexibility. AK VOV adopted the document in March 2008. TVE graduates are required to demonstrate an independent attitude to work, but also the ability to "manage a team of co-workers and bear

[32] The project was implemented by the Czech Association of Schools of Tertiary Vocational Education (CASPHE), subsidized by MŠMT, and supported by members of AK VOV, representing both the educational and private firms sectors.

responsibility for the work of others within complex and mixed groups of individuals". This corresponds well to the characteristics of competence on level 6 of the EQF. The focus on narrow professional specialisation (compared to bachelor's programmes) specified in the AK VOV document indicates the level of knowledge corresponding rather to level 5 of the EQF. On the other hand, certain aspects of TVE, as defined in the report, correspond to descriptors in the QF EHEA (Dublin Descriptors). These are more numerous, and are divided in 5 categories. Comparison is possible for descriptors in the short cycle and first cycle (corresponding to levels 5 and 6 of the EQF).

Table 12: Comparison of descriptors in short cycle (EQF 5) and 1st cycle (EQF 6)

	short cycle	**1st cycle**
Knowledge and understanding	have demonstrated knowledge and understanding in a field of study that builds upon general secondary education and is typically at a level supported by advanced textbooks; such knowledge provides an underpinning for a field of work or vocation, personal development, and further studies to complete the first cycle;	have demonstrated knowledge and understanding in a field of study that builds upon their general secondary education, and is typically at a level that, whilst supported by advanced textbooks, includes some aspects that will be informed by knowledge of the forefront of their field of study;
Applying knowledge and understanding	can apply their knowledge and understanding in occupational contexts;	can apply their knowledge and understanding in a manner that indicates a professional approach to their work or vocation, and have competences typically demonstrated through devising and sustaining arguments and solving problems within their field of study;
Making judgements	have the ability to identify and use data to formulate responses to well-defined concrete and abstract problems;	have the ability to gather and interpret relevant data (usually within their field of study) to inform judgements that include reflection on relevant social, scientific or ethical issues;
Communication	can communicate about their understanding, skills and activities, with peers, supervisors and clients;	can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences;

Learning skills	have the learning skills to undertake further studies with some autonomy.	have developed those learning skills that are necessary for them to continue to undertake further study with a high degree of autonomy.

There is a fairly high congruence between the AK VOV document and the descriptors in the first cycle in the "**communication**" category ("capable of formulating and clearly presenting their own opinions, reflecting also the views of other group members" corresponds to the requirement "that students can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences"), and in the "**learning skills**" category ("further study is based on their company's requirements; assess the success of their learning, and determine their own needs within a structured learning environment" corresponds "to continue to undertake further study with a high degree of autonomy.").[33]

The definition of TVE's objectives also has several common points with the Dublin descriptors. In the "**knowledge and understanding**" category, both cycles mention the need to follow up on the scope of secondary education, which it should exceed in the 1st cycle. In the "**applying of knowledge and understanding**", 1st cycle demands a "professional aproach" and the ability to "solve problems within their field of study", which corresponds with "the performance of demanding specialised activities".

Tertiary vocational education is completed by obtaining a diploma, which also includes defending a graduate paper. In this, students demonstrates their knowledge and the ability to use it, but also the skills and competences included in categories "**making judgements**" and **"communication"** for the 1st cycle: the ability "to gather and interpret relevant data (usually within their field of study) to inform judgements that include reflection on relevant social, scientific or ethical issues", and "communicate information, ideas, problems and solutions to both specialist and non-specialist audiences".

The duration of study (3 to 3.5 years) also speaks for referencing TVE to the 1st cycle of the QF-EHEA; such a programme does definitely not fall into the "short cycle" category, but rather corresponds to the typical duration of bachelor's programmes.

Further arguments supporting this may be found by a more detailed analysis of the documents required for the accreditation of the individual educational programmes.

Qualifications obtained in tertiary vocational education therefore largely meet the requirements set by descriptors on level 6 of the EQF, and/or the 1st cycle of the QF-EHEA, which corresponds to EQF level 6.

[33] Czech students are expected to acquire the prerequisites for "independent acquisition of information and lifelong learning" during secondary education – see Section 57 of the Education Act.

In a sense, more important than a formal congruence between the descriptors and the legal standards or internal standards of the Accreditation Commission for Tertiary Vocational Education is the way the obtained qualifications are utilized in practice, and the way qualifications are perceived. Professional recognition is also important for the EQF. In the field of regulated professions, such as nurses, both tertiary vocational and bachelor's education is compliant with the EU directive, and is therefore recognised on the same level. Similarly, education in the field of social work is recognised on the same level.

In case of "academic recognition" (*i.e.* the recognition of a qualification obtained for the purpose of further learning), bachelor's programmes are on a higher level than tertiary vocational education in the Czech tertiary education system, since the latter focuses more on practical utilization of the curriculum. Tertiary vocational education does not allow entrance to the 2nd cycle of study, *i.e.* the master's programmes; however, that is not required by the EQF.

Bachelor's programmes

Bachelor's study programmes are described as follows in the Higher Education Act:

Section 45 (*1): "Bachelor's study programmes focus on preparation for performing an occupation and for subsequent studies in a master's programme. Bachelor's study programmes directly utilize current knowledge and methods; they also include theoretical knowledge in the scope required."*

One of the principal requirements of the Accreditation Commission (AK) is that the curriculum within a bachelor's programme is "based on the application of the latest knowledge, as well as the methods of research, development or any other creative activities in a given field". This requirement is also included in the standards issued by AK which higher education institutions have to follow in order to obtain accreditation for their programmes.[34]

Table 13: Comparison of leaning outcomes for bachelor's programmes with QF EHEA and EQF descriptors

Higher Education Act	**EQF – level 6**	**EHEA – 1st Cycle** (The Czech Republic has not completed Bologna self-certification.)

34 See the *Standards of the Accreditation Commission for the Assessment of Applications for Accreditation, Broadening an Accreditation and Extending the Validity of Accreditation of Study Programmes and Study Fields*, 2010. [on line]
http://www.akreditacnikomise.cz/cs/standardy-pro-posuzovani-zadosti.html

Bachelor's programmes focus on preparation for performing an occupation and for subsequent studies in a Master's programmes. Bachelor's programmes directly utilize current knowledge and methods; they also include theoretical knowledge in the scope required.	**Knowledge**: advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	contains usually 180 – 240 ECTS credits; **Knowledge and understanding**: have demonstrated knowledge and understanding in a field of study that builds upon and their general secondary education, and is typically at a level that, whilst supported by advanced textbooks, includes some aspects that will be informed by knowledge of the forefront of their field of study
	Skills: advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	**Applying knowledge and understanding:** can apply their knowledge and understanding in a manner that indicates a professional approach to their work or vocation, and have competences typically demonstrated through devising and sustaining arguments and solving problems within their field of study
	Competence: manage complex technical or professional activities or projects, taking responsibility for decision making in unpredictable work or study contexts; take responsibility for managing professional development of individuals and groups	**Making judgements:** have the ability to gather and interpret relevant data (usually within their field of study) to inform judgements that include reflection on relevant social, scientific or ethical issues **Communication:** can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences **Learning skills:** have developed those learning skills that are necessary for them to continue to undertake further study with a high degree of autonomy

Compared to the EQF descriptors, the definition included in the Higher Education Act seems rather brief, but there are some similarities. For example, the description of the "**knowledge and understanding**" category in the 1st cycle of EHEA framework speaks of "knowledge of the forefront of their field of study", and states that the study field is "supported by advanced textbooks", whereas our description speaks of "direct utilization of current knowledge and methods". The QF-EHEA does not speak of "theoretical knowledge" (in any cycle), but theory is mentioned in the EQF ("a critical understanding of theories and principles"). The Dublin Descriptors for the "**knowledge and understanding**" category require that 1st cycle qualifications are awarded to those students who have "have demonstrated knowledge and understanding in a field of study that builds upon and their general secondary education". This is a necessary prerequisite for accreditation. In the "**knowledge**" category, EQF requires "advanced knowledge of a field of work or study, involving a critical understanding of theories and principles".

Dublin Descriptors require that graduates be able to "apply their knowledge and understanding in a manner that indicates a professional approach to their work or vocation, and have competences typically demonstrated through devising and sustaining arguments and solving problems within their field of study". Such requirements are not explicitly defined in any of the national documents; however, graduates are required to complete and defend a bachelor's paper at the end of their studies. The Accreditation Commission regularly monitors the quality of bachelor's papers. Completion of a bachelor's paper requires that a student is not only be capable of "applying their knowledge and understanding", but also a sufficiently advanced knowledge, and the ability to defend and argue for the knowledge or innovation presented. To a considerable extent, graduates demonstrate by the completion and defence of an bachelor's paper that they have mastered the competences included in the Dublin Descriptors in the "**making judgements**" category: namely, the ability "to gather and interpret relevant data (usually within their field of study) to inform judgements that include reflection on relevant social, scientific or ethical issues".

In the "**skills**" category, EQF descriptors require that a graduate demonstrate "advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study". The Accreditation Commission requires that students in a study programme achieve the "ability to work creatively and independently, ability to follow specialized literature in their field, and the ability to interpret and apply the results of general research", which overlaps with the EQF descriptors to a great extent. In relation to that, the Accreditation Commission requires that bachelor's programmes include "basic theoretical and methodological disciplines, incorporated as compulsory subjects". Students demonstrate these competences, as well as the Dublin Descriptors' requirement in "**communication**" to be able to "communicate information, ideas, problems and solutions to both specialist and non-specialist audiences", by completing and defending a final bachelor's paper.

According to the Higher Education Act, the prerequisite for admission to a bachelor's and master's study programmes is the completion of general upper secondary or vocational upper secondary education with Maturita exam. Considering that in the Czech Republic bachelor's study programmes have been set up pursuant to the Bologna Declaration, *i.e.* as the first stage of higher education, and allow graduates both to enter the labour market and/or pursue further studies, graduates of a bachelor's study programme may apply for admission to a master's study programme. Therefore, we may conclude that bachelor's studies in the Czech Republic corresponds to the Dublin Descriptors requirement in the "**learning skills**" category; namely, that graduates of programmes in the 1st cycle "have developed those learning skills that are necessary for them to continue to undertake further study with a high degree of autonomy".

Dublin Descriptors require that the study load in a 1st cycle programme correspond to 180 – 240 ECTS credits. Considering that most higher education institutions (all public higher education institutions) in the Czech Republic have introduced the ECTS credit system both for bachelor's and master's studies, and that one academic year

corresponds to 60 ECTS credits, there is a definite congruence with the QF-EHEA, in that 3 to 4 standard years of study correspond to 180 – 240 ECTS credits.

The description of a bachelor's study programme, as given in the Higher Education Act and in the *Standards of the Accreditation Commission,* corresponds to level 6 of the EQF and the 1st cycle of the QF-EHEA.

III 2. 2 Level 7: Master's programmes

Qualifications at master's level have been referenced to level 7 EQF based on the comparison of the relevant EQF descriptors and national legal regulations.

Master's study programmes are described in Section 46 (1) of the Higher Education Act:

(1) *"Master's study programmes focus on acquiring theoretical knowledge based on the current state of scientific knowledge, research and development, on mastering their application and developing an aptitude for creative work; in the field of fine arts, master's programmes focus on specialized artistic training and developing of the students' talents."*

The above requirements are defined very briefly, but they clearly distinguish between knowledge (acquiring theoretical knowledge based on the current state of scientific knowledge, research and development) and competences (developing an aptitude for creative work).

Requirements corresponding to level 7 of the EQF are also included in the *Standards of the Accreditation Commission*, where they are defined as "the ability to conduct independent professional work; the ability to analyse the latest trends in a given field; and the ability to prepare and participate in research activities".

Table 14: Comparison of leaning outcomes for master's programmes with QF EHEA and EQF descriptors

Higher Education Act	**EQF – level 7**	**EHEA – 2nd cycle** (The Czech Republic has not completed Bologna self-certification.)

Master's study programmes focus on **Knowledge:** acquiring theoretical knowledge based on the current state of scientific knowledge, research and development,	 **Knowledge**: highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research; critical awareness of knowledge issues in a field and at the interface between different fields	60 – 180 ECTS credits; usually, 90-180 ECTS, and a minimum of 60 ECTS credits must simultaneously be achieved on the 2nd cycle level. **Knowledge and understanding:** have demonstrated knowledge and understanding that is founded upon and extends and/or enhances that typically associated with Bachelor's level, and that provides a basis or opportunity for originality in developing and/or applying ideas, often within a research context
Skills: mastering their application	**Skills:** specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields	**Applying knowledge and understanding:** can apply their knowledge and understanding, and problem solving abilities in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study
Competences: developing an aptitude for creative work; in the field of fine arts, Master's programmes focus on specialized artistic training and developing of the students' talents.	**Competence:** manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches; take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams	**Making judgements:** have the ability to integrate knowledge and handle complexity, and formulate judgements with incomplete or limited information, but that include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgements **Communication:** can communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and non-specialist audiences clearly and unambiguously **Learning skills:** have the learning skills to allow them to continue to study in a manner that may be largely self-directed or autonomous

A fair degree of congruence between the higher education act and the EQF framework may be found in the **skills** and **knowledge** categories "acquiring theoretical knowledge based on the current state of scientific knowledge, research and development and mastering their application" and **competence** category "developing an aptitude for creative work". EQF: "create new knowledge and methods", "integrating knowledge from various disciplines".

The categories "**knowledge and understanding**" and "**applying knowledge and understanding**" in QF-EHEA overlap to a considerable extent with the formulations of the Higher Education Act. The Higher Education Act states that "the prerequisite for admission to a master's study programme which is the continuation of a bachelor's

study programme is a proper completion of the respective bachelor's study programme." The Dublin Descriptors prescribe that 2nd cycle qualifications can only be awarded to students who "have demonstrated knowledge and understanding that is founded upon and extends and/or enhances that typically associated with Bachelor's level,".

Further knowledge requirements on level 7 EQF include "critical awareness of knowledge issues in a field and at the interface between different fields". Similarly, the Dublin Descriptors require that graduates be "can apply their knowledge and understanding, and problem solving abilities in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study", and to be "integrate knowledge and handle complexity, and formulate judgements with incomplete or limited information, but that include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgements". Similar requirements are included in the *Standards of the Accreditation Commission*, where they are defined as "the ability to conduct independent professional work; the ability to analyse the latest trends in a given field; and the ability to prepare and participate in research activities". These requirements are verified especially by the completion and defence of a master's thesis. Graduates also have to prove that they have acquired the **communication** skills prescribed in the Dublin Descriptors for the QF-EHEA, *i.e.* they "can communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and non-specialist audiences clearly and unambiguously". The Accreditation Commission regularly monitors the quality of master's theses.

QF-EHEA require that the study load in the 2nd cycle study programmes correspond typically 90 – 120 ECTS credits, and a minimum of 60 ECTS credits has to be obtained on the 2nd cycle level. Similarly as in case of the bachelor's programmes, the standard duration of studies stipulated in the Higher Education Act (1–3 standard years of study), where one academic year corresponds to 60 ECTS credits, there is a congruence with the QF-EHEA. Master's programmes in the Czech Republic are usually completed within 2 standard years of study (*i.e.*, 120 ECTS credits). As far as undivided master's programmes is concerned, the only four-year master's programme used to be the programme educating primary school teachers; at present, however, all of these programmes take five years and correspond to 300 ECTS credits.

The description of a master's study programme, as given in the Higher Education Act and in *the Standards of the Accreditation Commission*, corresponds to EQF level 7 and the 2nd cycle of the QF-EHEA.

III. 2. 3 Level 8: Doctoral programmes

Qualifications at doctoral level have been referenced to level 8 of the EQF.

There is agreement between the description of doctoral programmes in the act on Higher Education and descriptors of the 3rd cycle and EQF level 8. We need to point

out that pursuant to Czech law, doctoral programmes are not designed exclusively to prepare students for scientific or research activities, but include also creative development work, which is a broad enough term to cover even the innovations mentioned in the EQF. However, both of the European frameworks reflect the fact that there is a far broader range of doctoral programmes in Europe than in the Czech Republic.

Table 15: Comparison of leaning outcomes for doctoral programmes with QF EHEA and EQF descriptors

Higher Education Act	**EQF – level 8**	**EHEA – 3rd cycle** (The Czech Republic has not completed Bologna self-certification.)
Doctoral study programmes The standard length of study is three to four years.		Study load is not expressed by ECTS credits; however, the Bergen Communiqué from the ministerial conference states that a standard length of study is 3-4 years[35].
Knowledge Doctoral study programmes focus on scientific research	**Knowledge:** knowledge at the most advanced frontier of a field of work or study and at the interface between fields	**Knowledge and understanding:** have demonstrated a systematic understanding of a field of study and mastery of the skills and methods of research associated with that field
Skills: and independent creative work in the field of research or development, or independent theoretical and creative work in the field of fine arts; A dissertation must contain original and published research results or results accepted for publication.	**Skills:** the most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice	**Applying knowledge and understanding:** have demonstrated the ability to conceive, design, implement and adapt a substantial process of research with scholarly integrity; have made a contribution through original research that extends the frontier of knowledge by developing a substantial body of work, some of which merits national or international refereed publication

35 See *European Higher Education Area*, Communiqué of the Conference of European Ministers Responsible for Higher Education, Bergen, 19-20 May 2005. Available online at <http://www.ehea.info/Uploads/Declarations/Bergen_Communique1.pdf>.

Competence: Studies are completed by passing a state doctoral exam and defending a dissertation, which prove that a graduate is prepared for and capable of independent work in the field of research or development, or independent theoretical and creative work in the field of fine arts.	**Competence:** demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research	**Making judgements:** are capable of critical analysis, evaluation and synthesis of new and complex ideas **Communication:** can communicate with their peers, the larger scholarly community and with society in general about their areas of expertise **Learning skills:** can be expected to be able to promote, within academic and professional contexts, technological, social or cultural advancement in a knowledge based society

The requirements of the Dublin Descriptors in the "**applying knowledge and understanding**" category correspond well to the content of the descriptors for the 3rd cycle of the EHEA qualifications framework ("have made a contribution through original research that extends the frontier of knowledge by developing a substantial body of work, some of which merits national or international refereed publication"). The *Standards of the Accreditation Commission* require that "the content of a doctoral study programme and its respective field focus on scientific research and independent creative work." The *Standards* further require that "the subjects of doctoral dissertations clearly demonstrate that their completion requires independent creative work in the field of research or development, or independent theoretical and creative work in the field of fine arts". When assessing accreditation applications, the Commission takes into consideration whether dissertation subjects are in accord with the relevant department's research focus.

The *Standards of the Accreditation Commission* put a great emphasis on the doctoral students' scientific and research activities, demanding that "scientific, research, development, artistic and other activities in an area related to the doctoral study programme must be related to the activities of the department for which the higher education institution seeks an accreditation of a doctoral study programme".

The completion and defence of a dissertation also proves the **communication** skills required by the Dublin Descriptors, *i.e.* the ability to "can communicate with their peers, the larger scholarly community and with society in general about their areas of expertise". The standard length of study, *i.e.* 3-4 years, is also the same.

The description of a doctoral study programme, as given in the Higher Education Act and in the *Standards of the Accreditation Commission*, corresponds to EQF level 8 and the 3rd cycle of the QF-EHEA.

III. 3 Referencing of NSK levels

A framework for qualifications awarded under the act 179/2006 Sb. was developed in 2005 and approved by the Ministry of Education in January 2010.[36].

The level descriptors of the NSK were developed in close connection with the eight levels of the EQF. They describe the activities required at each level for employment. Despite formal differences, a comparison of the level descriptors of the NSK to those of the EQF showed that the eight qualification levels of the NSK correspond well to those of the EQF.

Table 16: Comparison of NSK and EQF descriptors

Level descriptors in the NSK	Level	Level descriptors in the EQF Knowledge Skills Competence
• Identify work tools, equipment, raw materials, etc. • Carry out tasks according to simple, unchanging instructions • Identify problems which occur while following these instructions	1	basic general knowledge basic skills required to carry out simple tasks work or study under direct supervision in a structured context
• Be familiar with materials describing the work to be done • Choose appropriate tools, materials etc. for use in each procedure or method from among the various options • Evaluate the quality of his or her products or services • Identify problems which occur while following instructions • Carry out instructions in standard situations with a minimum of changes	2	basic factual knowledge of a field of work or study basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools work or study under supervision with some autonomy
• Be familiar with documentation, norms and standards in common use in the field • Select appropriate procedures, methods, tools, raw materials etc. from various options, according to conditions and requirements • Evaluate the quality of his or her products or services, and those of others • Carry out quality control, determine the causes of deficiencies and decide how to eliminate them • Identify problems which occur while following the selected procedures, determine their causes and decide how to solve them • Carry out selected procedures depending on conditions and requirements including taking into account social, economic, and ecological considerations • Present his or her work, products or services • Direct a small group carrying out simple or supporting activities	3	knowledge of facts, principles, processes and general concepts, in a field of work or study a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information take responsibility for completion of tasks in work or study adapt own behaviour to circumstances in solving problems
• Be familiar with documentation, norms, standards and regulations in common use in the field • Select appropriate procedures, methods, tools, raw materials etc. from various options, according to conditions and requirements • Evaluate the quality of his or her products or services, and those of others; carry out quality control, determine the causes of deficiencies and their consequences and decide how to eliminate them	4	factual and theoretical knowledge in broad contexts within a field of work or study

[36] Memorandum *Qualification Levels in the National Qualifications System: Description of the levels and how they relate to the EQF*, MŠMT, Executive Committee no. 1, 5 January 2010

• Identify problems which occur while following the selected procedures, determine their causes and implement the required changes to the procedure • Identify social, economic and environmental aspects of any problems which arise • Determine the causes of unusual behaviour from individuals and objects in the workplace • Assess the relevance of vocational information • Evaluate the methods of others from the point of view of using them in his or her own work • Carry out selected procedures, with modifications depending on conditions and requirements including taking into account social, economic, and ecological considerations • Use technical information from a variety of sources in problem solving • Make suggestions for improving results • Design simpler analogues of existing procedures and products • Further development of proposals for new products and procedures • Present his or her work, products or services, discuss problems and find solutions and communicate effectively • Direct a small group carrying out selected procedures depending on conditions and requirements		a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities
• Be familiar with documentation, norms, standards and regulations in use in the field to the extent that he or she can explain them to others in standard situations • Select appropriate procedures, methods, tools, raw materials etc. from various options, according to conditions and requirements • Evaluate the quality of his or her products or services, and those of others; carry out quality control, determine the causes of deficiencies and their consequences and decide how to eliminate them • Identify problems which occur while following the selected procedures, determine their causes and implement the required changes to the procedure • Identify social, economic and environmental aspects of any problems which arise • Distinguish between usual and unusual behaviour from individuals and objects in the workplace, determine causes and context of unusual behaviour, and draw conclusions and formulate proposals • Analyse moderately complex systems, phenomena and processes • Evaluate the relevance of technical information to resolving standard problems • Evaluate the methods of others from the point of view of using them in his or her own work • Carry out selected procedures, with modifications depending on conditions and requirements including taking into account social, economic, and ecological considerations • Independently carry out common technical tasks by standards methods • Solve problems requiring abstraction and employ simple research methods • Use technical information from a variety of sources in problem solving • Integrate several components into complex solutions • Formulate proposals for improvements including proposals for new processes • Design moderately complex procedures and products • Present his or her work, products or services, discuss problems and find solutions, communicate effectively and present convincing arguments • Direct a group carrying out moderately complex technical tasks depending on unforeseen conditions and requirements	5	comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge a comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems exercise management and supervision in contexts of work or study activities where there is unpredictable change; review and develop performance of self and others

• Be familiar with documentation, norms, standards and regulations in use in the field to the extent that he or she can explain them to others in standard and non-standard situations • Select appropriate procedures, methods, tools, raw materials etc. from various options, according to conditions and requirements • Evaluate the quality of his or her products or services, and those of others, carry out quality control, determine the causes of deficiencies and their consequences and decide how to eliminate them • Identify problems which occur while following the selected procedures, determine their causes and implement the required changes to the procedure • Identify social, economic and environmental aspects of any problems which arise • Analyse the causes and context of unusual behaviour from individuals and objects in the workplace, draw conclusions and formulate proposals • Analyse moderately complex systems, phenomena and processes • Assess the relevance of technical information • Evaluate the methods of others from the point of view of using them in his or her own work • Carry out selected procedures, with modifications depending on conditions and requirements including taking into account social, economic, and ecological considerations • Carry out fairly complex tasks for which there are no available procedures and methods • Solve problems requiring abstraction • Use technical information from a variety of sources in problem solving • Integrate several components into complex solutions • Propose system improvements • Design fairly complex procedures and products • Solve problems requiring broad theoretical knowledge, use research methods and simple scientific principles • Present his or her work, products or services and justify them in the face of criticism, discuss problems and find solutions, communicate effectively and present convincing arguments • Direct a group carrying out complex technical activities in unforeseen conditions	6	advanced knowledge of a field of work or study, involving a critical understanding of theories and principles advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts; take responsibility for managing professional development of individuals and groups
• Be familiar with documentation, norms, standards and regulations in use in the field to the extent that he or she can explain them to others in standard and non-standard situations and evaluate whether there is a need for changes in these norms and documents • Plan procedures, methods and the use of tools and materials etc. according to desired results • Evaluate the quality of his or her products or services, and those of others, carry out quality control, determine the causes of deficiencies and their consequences and decide how to eliminate them • Identify problems which occur while following the selected procedures, determine their causes and implement the required changes to the procedure • Identify social, economic and environmental aspects of any problems which arise • Analyse the causes and context of unusual behaviour from individuals and objects in the workplace, draw conclusions and formulate proposals • Analyse complex systems, phenomena and processes • Evaluate the relevance of technical information and findings from other scientific fields • Evaluate the results of the works of others from the point of view of applying them in his or her own work • Carry out selected procedures, with modifications depending on conditions and requirements including taking into account social, economic, and ecological considerations	7	highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research; critical awareness of knowledge issues in a field and at the interface between different fields specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches take responsibility for contributing to professional knowledge and

• Design procedures and methods for the solution of complex problems and coordinate their implementation • Solve problems requiring abstraction and generalisation • Use technical information from a variety of sources and findings from various scientific fields in problem solving • Integrate several components into complex solutions • Propose fundamental systemic changes • Plan and implement new, complex procedures and products • Solve problems requiring broad and highly specialised theoretical knowledge, use research methods and simple scientific principles • Present his or her work, products or services, design new procedures, justify them in the face of criticism, lead discussions of complicated problems and find solutions, communicate effectively and present convincing arguments • Organise and plan complex processes carried out by multiple groups in unforeseen conditions, including strategic decision making		practice and/or for reviewing the strategic performance of teams
Qualification level 7, and: • Solve problems requiring innovations of importance to the whole field • Contribute to the dissemination of the results of original research • Develop theories and methods for the most demanding creative activities, including scientific research and development • Present proposed procedures and research results and defend them in the face of criticism, and lead discussions on research and scientific problems • Direct wide-ranging research and development activities	8	knowledge at the most advanced frontier of a field of work or study and at the interface between fields the most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research

The descriptors of the NSK are not formulated in terms of knowledge, skills and competences. On closer examination of the activities which define the qualification levels of the NSK, it is clear however that knowledge and skills are a prerequisite for carrying out the required activities. For example, in order to "be familiar with documentation, norms and standards in common use in the field" or to "select appropriate procedures, methods, tools, raw materials, etc. from various options, according to conditions and requirements" (cf. NSK level 3), someone must have the corresponding "knowledge of facts, principles, processes and general concepts in a field of work or study", as described in the knowledge category of the EQF descriptors for level 3. Similarly, the skills which the NSK lists at level 6, to "assess the relevance of technical information" and to "solve problems requiring broad theoretical knowledge, use research methods and simple scientific principles", require "advanced knowledge of a field of work or study, involving a critical understanding of theories and principles. Similar links can be found at all qualification levels of the NSK and EQF. In the categories of skills and competences, a correspondence can be shown at all eight levels between the descriptors of the EQF and the NSK. The skill "identify work tools, equipment, raw materials etc." at level 1 in the NSK corresponds to the "basic skill

required to carry out simple tasks" (cf. level EQF 1). In the category of competences, the requirement to "carry out tasks according to simple, unchanging instructions" corresponds to "work or study under direct supervision in a structured context". At level 2, the phrases "be familiar with materials describing the work to be done" and "choose appropriate tools, materials etc. for use in each procedure or method from among the various options" correspond to "work or study under supervision with some autonomy". At higher levels, as the range of requirements becomes broader, the correspondence between the EQF and the NSK becomes clearer. The descriptors at levels 1-8 of the NSK therefore correspond to those of levels 1-8 of the EQF.

The following analysis of level 4 descriptors from the NSK shows a possible division of the learning outcomes into knowledge, skills and competentences, although the NSK descriptors are not normally so divided, but rather are considered as a whole. This division shows the main category of each descriptor, though other categories may also be implicit. NSK descriptors are followed by EQF descriptors of the same level and, as an example, the assessment standard for the qualification System Administrator for Small and Medium Enterprises, in which the learning outcomes are colour coded according to the categories used by the EQF.

Example division of NSK descriptors into the categories knowledge, skills and competences:

NSK descriptors – Level 4

Be familiar with documentation, norms, standards and regulations in common use in the field

Select appropriate procedures, methods, tools, raw materials etc. from various options, according to conditions and requirements

Evaluate the quality of his or her products or services, and those of others,

Carry out quality control, determine the causes of deficiencies and their consequences and decide how to eliminate them

Identify problems which occur while following the selected procedures, determine their causes and implement the required changes to the procedure

Identify social, economic and environmental aspects of any problems which arise

Determine the causes of unusual behaviour from individuals and objects in the workplace

Assess the relevance of vocational information

Evaluate the methods of others from the point of view of using them in his or her own work

Carry out selected procedures, with modifications depending on conditions and requirements including taking into account social, economic, and ecological considerations

Use technical information from a variety of sources in problem solving

Make suggestions for improving results

Design simpler analogues of existing procedures and products

Further development of proposals for new products and procedures

Present his or her work, products or services, discuss problems and find solutions and communicate effectively

Direct a small group carrying out selected procedures depending on conditions and requirements

EQF Descriptors – Level 4

Knowledge	**Skills**	**Competence**
In the context of EQF, knowledge is described as theoretical and/or factual factual and theoretical knowledge in broad contexts within a field of work or study	In the context of EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments) a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	In the context of EQF, competence is described in terms of responsibility and autonomy exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities

Example assessment standard of with the learning outcomes divided into knowledge, skills and competences.

ASSESSMENT STANDARD

Vocational Qualification

Administrator of operating systems for small and medium organizations (18-001-M)

Qualification level 4

A. EVALUATION CRITERIA AND METHODOLOGY

1. A.6.C.2.1.221 Analysis and Design of Hardware and Software for Use within a Small Organization	
Evaluation criteria	**Ways of Verification**
a) To analyse the client's written specifications and, through an interview, to elicit details (to find out necessary information about the present conditions from the point of view of technology, finance, assets and licences). The objective is to briefly formulate a draft solution	Verification in writing, with oral defence

b) To design adequate HW and SW for stations and for the server, following from the solutions suggested	Verification in writing, with oral defence
c) To design connections between computers, the architecture, the topology and the type of the network, and the Internet connection	Verification in writing, with oral defence
d) To develop a draft budget, and to present it to the client	Verification in writing, with oral defence
e) To be able to use proper terminology, to know the functions and the parameters of the means in the area of HW and SW	Written test
All criteria must be met.	

2. C.4.C.2.1.137 Operating System Installation and Configuration	
Evaluation criteria	**Ways of Verification**
a) To design the parameters of the OS installation on the server, taking into account the specific conditions and the client's specifications (the decision on key applications – domain controller, DNS, DHCP, web server, file server, mail server, print server)	Oral verification prepared in writing
b) To configure the OS on the server according to the client's specifications (to configure the network parameters and connectivity to the Internet, to establish a centralized user administration, to configure user policies, to assign access to users and user groups, to know authentication and authorization principles)	Practical presentation
c) To design an optimized way of OS installation at client stations, taking into consideration the specific conditions according to the client's specifications (*e.g.* batch installation, prepared image)	Verification in writing
d) To configure the OS on a client station (profile transfer, configuration of domain and local users and their rights, configuration of user environment)	Practical presentation
e) To be able to use proper terminology, to know the functions and the parameters of the means in the area of OS	Written test
All criteria must be met.	

3. C.4.C.2.1.421 Network Configuration	
Evaluation criteria	**Ways of Verification**
a) To connect the stations according to the client's specifications (physical connection, registration in the domain)	Practical presentation
b) To configure data and equipment sharing according to the client's specifications (network drives, printers, scanners, network print server)	Practical presentation
c) To describe the principles and the risks connected with VPN configuration	Oral verification
d) To make a decision on the technology, according to the client's needs (for example, ADSL, Wi-Fi, optical cable). To compare the advantages, the disadvantages and the financial requirements, and to present the design to the client	Oral verification
e) To be able to use proper terminology, to know the functions and the parameters of the means in the area of networks (*e.g.* the differences between passive and active elements, cache records, principles of virtual networks, active directory)	Written test
All criteria must be met.	

4. C.4.C.2.1.138 Installation and Configuration of Peripheral Devices	
Evaluation criteria	**Ways of Verification**
a) To connect and configure local and network output devices according to the client's specifications (*e.g.* monitors, projectors, printers, plotters)	Practical presentation with oral defence
b) To connect and configure local and network input devices according to the client's specifications (*e.g.* scanners and cameras)	Practical presentation with oral defence
All criteria must be met.	

5. A.6.C.2.1.134 Monitoring Operating Systems' Operation; Diagnostics and Performance Optimization	
Evaluation criteria	**Ways of Verification**
a) To diagnose the condition and the capacity load of hardware system components by means of the tools in the operating system (for example, processor temperature monitoring, memory consumption, processor capacity load, disc space available, disc fragmentation)	Practical presentation

b) To monitor system logs, to identify critical events, to monitor logs from multiple servers and analyse them	Practical presentation with oral defence
c) To analyse errors and malfunctions within operating systems. To find solutions for problems using open sources – on the manufacturer's website or on professionally-oriented portals. To understand the solution identified in English. To implement the solution	Practical presentation with oral defence
d) To verify the functionality of the hardware components; to solve a simple problem (*e.g.* the printer does not print, the PC does not boot)	Practical presentation with oral defence
All criteria must be met.	

6. C.4.C.2.1.441 Data Security	
Evaluation criteria	**Ways of Verification**
a) To analyse the state and the safety risks, considering the particular solution	Oral verification
b) To suggest a solution to secure the data against misuse (*e.g.* disc coding, authentication principles, PKI)	Practical presentation with oral defence
c) To install and configure an anti-virus and anti-spyware programme	Practical presentation
d) To suggest a procedure to remove viruses, worms and root kits	Oral verification
e) To explain firewall principles (types, *e.g.* at the station; network, stateful and application firewalls; routing tables)	Verification in writing, with oral defence
f) To demonstrate an intervention in the firewall configuration (*e.g.* allow a specific application, set a port limit)	Practical presentation
g) To be able to use proper terminology, to know the functions and the parameters of the means in the area of data security	Written test
All criteria must be met.	

7. C.4.C.2.1.442 Data Protection	
Evaluation criteria	**Ways of Verification**
a) To design a solution for data backup (for example, to decide on the backup medium and software, to suggest a backup plan, to know the risks)	Oral verification
b) To backup and renew the data by means of appropriate tools	Practical presentation

c) To be able to use proper terminology, to know the functions and the parameters of the means in the area of data protection (full backup, incremental backup, backup media and devices)	Written test
All criteria must be met.	

8. A.7.C.2.1.147 Basic Scripts and Batch Programing	
Evaluation criteria	**Ways of Verification**
a) To compare 2-3 tools used for scripting (CMD, VBScript, JScript, PowerShell, Unix Shell); the advantages and the disadvantages, what they're used for	Oral verification
b) To program a simple task by means of a selected scripting tool (for example, batch file renaming, directory synchronization)	Practical presentation
c) To use knowledge of basic instructions within the operating system for batches and scripts	Practical presentation
d) To understand a manual written in English, to be able to find necessary information and use it to write a script	Practical presentation
All criteria must be met.	

9. C.4.C.2.1.139 Client Software Installation and Administration	
Evaluation criteria	**Ways of Verification**
a) To install and configure client software (common office applications; to explain possible installation methods *e.g.* in the standard way, in batches, remotely)	Practical presentation with oral defence
b) To train users to use the client software (to be able to communicate with users adequately as regards their needs, knowledge and skills)	Practical presentation
c) To design a concept for keeping documentation about the HW and SW in compliance with legal regulations in force (versions, licences); to design a tool for software audits	Oral verification prepared in writing
All criteria must be met.	

Complementing the information above, as evidence of agreement both between the descriptors of the EQF and NSK and between the descriptions of qualifications awarded in initial secondary education (see Table 7) and those awarded under the act 179/2006, the qualification and assessment standard of the vocational qualification **Machinery and Equipment Repairman** from the NSK is given below.

Example of the NSK Qualification and Assessment Standard

QUALIFICATION STANDARD

Vocational Qualification DK 1

MACHINERY AND EQUIPMENT REPAIRMAN (code: 23-001-H)

Qualification level 3

Technical Competences

Code	Technical Competence	Level
A.1.E.2.1.001	Familiarity with engineering standards and technical documentation for machinery, appliances and equipment	3
A.2.E.2.1.930	Selection of a proper work procedure, instruments, tools and spare parts for the assembly, dismantling and repairs of machinery and equipment	3
A.4.E.2.1.004	Measuring and checking dimensions, shape, surface alignment, and finish quality	3
C.1.E.2.1.001	Manual working and processing of metal or plastic materials (cutting, clipping, filing, drilling, grinding, bending, etc.)	3
A.3.E.2.1.771	Monitoring and performance of operational tests of machinery, equipment and production lines	3
C.2.E.2.1.012	Marking out parts and raw products, using gauges, drawing tools and instruments or appliances	3
C.3.E.2.1.010	Assembling parts of machinery, equipment and production lines, assembly and activation	3
C.3.E.2.1.011	Assembling parts of rotating machines, including electrical parts, and their assembly	3
C.4.E.2.1.010	Maintenance, repairs and overhauls of machinery and equipment	3
C.4.E.1.1.001	Repairs and replacements of electrical parts of machinery, equipment and appliances, including the replacement of electronic components	3

Relation of vocational qualification to full qualification[37]

Type of vocational qualification	Field of study code and name
integrating	23-51-H/01 Industrial machinery mechanic

Authorising institution: Ministry of Industry and Trade

Relation to specific occupations (or standard positions):

- Industrial mechanic
- Operational mechanic and assembler
- Mining mechanic
- Mining rescue service mechanic
- Steel structure assembler
- Rotating machines assembler
- Ventilation system assembler
- Operating mechanic

ASSESSMENT STANDARD

Vocational Qualification DK 1

MACHINERY AND EQUIPMENT REPAIRMAN (code: 23-001-H)

Qualification level 3

A. EVALUATION METHODS AND CRITERIA

1. A.1.E.2.1.001 Familiarity with engineering standards and technical documentation for machinery, appliances and equipment	
Evaluation criteria	**Verification method**
a) read various forms of technical documentation	Orally, using a technical drawing
b) be familiar with selections of standards, engineering tables, etc.	Orally, searching in shop tables, selections of standards, etc.
c) use technical documentation	Orally, using a technological procedure

[37] This vocational qualification is associated with the programme type 23-53-H/01 Industrial Machinery Mechanic. "Integrating" means the competences listed in the qualification standard are a subset of the technical competences in the curriculum for the programme type 23-53-H/01 Industrial Machinery Mechanic in initial vocational education (see p. 88-90).

d) utilize servicing manuals etc.	Orally or in writing
All of the above criteria have to be met.	

2. A.2.E.2.1.930 Selection of a proper work procedure, instruments, tools and spare parts for the assembly, dismantling and repairs of machinery and equipment	
Evaluation criteria	**Verification method**
a) choose an appropriate work procedure	Orally or in writing
b) select instruments, equipment, tools, auxiliary materials, gauges and machinery required for the manufacturing, assembly, repairs, overhauls and maintenance of tools, appliances, gauges and other tools or their parts	Orally or in writing
c) correctly read data for the care, maintenance, adjustment, operation and service	Orally; explain, describe and substantiate
All of the above criteria have to be met.	

3. A.4.E.2.1.004 Measuring and checking dimensions, shape, surface alignment, and finish quality	
Evaluation criteria	**Verification method**
a) determine suitable measuring methods and suitable measuring and checking instruments based on the workpiece drawing	Practical demonstration with verbal explanation
b) measure the accuracy of dimensions and geometrical shape using a slide gauge, micrometer, and limit gauge, including the finish quality check	Practical demonstration with verbal explanation
c) evaluate products as to keeping within the prescribed deviations in shape and surface alignment	Practical demonstration with verbal explanation
All of the above criteria have to be met.	

4. C.1.E.2.1.001 Manual working and processing of metal or plastic materials (cutting, clipping, filing, drilling, grinding, bending, etc.)	
Evaluation criteria	**Verification method**
a) achieve the desired dimensions and shape of equipment, appliances, gauges and other tools and parts thereof by manual working and processing	Practical demonstration
b) rationally utilize instruments, equipment and tools for manual working and processing of metal and plastic materials	Practical demonstration
c) utilize manual mechanical equipment to increase the productivity of manual working and processing of metal and plastic materials	Practical demonstration
d) manually work and process metal and/or other plastic materials	Practical demonstration
All of the above criteria have to be met.	

5. A.3.E.2.1.771 Monitoring and performance of operational tests of machinery, equipment and production lines	
Evaluation criteria	**Verification method**
a) select a suitable method of operational testing of machinery, equipment and production lines and other tools and their state, using a servicing manual	Orally or in writing
b) analyze and evaluate the results of an operational test of machinery	Written test
c) perform an test pursuant to relevant regulations	Practical demonstration
All of the above criteria have to be met.	

6. C.2.E.2.1.012 Marking out parts and raw products, using gauges, drawing tools and instruments or appliances	
Evaluation criteria	**Verification method**

a) mark out a two-dimensional part (*i.e.* a sheet metal part)	Practical demonstration + verbal explanation
a) mark out a three-dimensional part on a marking-off board, using gauges, marking-off equipment and tools	Practical demonstration + verbal explanation
b) check the marked-out part	Practical demonstration + measurement
All of the above criteria have to be met.	

7. C.3.E.2.1.010 Assembling parts of machinery, equipment and production lines, assembly and activation	
Evaluation criteria	**Verification method**
a) assemble parts into a whole as required by their mutual alignment based on their function	Practical demonstration
b) check the surface alignment of connecting parts, measure planarity and collinearity	Practical demonstration + measurement
c) work with a shop rule, blade rule, water level, lamellar gauges, dial indicators, optical devices, etc.	Practical demonstration + measurement
d) perform an operational test of machinery, equipment, production lines, etc.	Practical demonstration
All of the above criteria have to be met.	

8. C.3.E.2.1.011 Assembling parts of rotating machines, including electrical parts, and their assembly	
Evaluation criteria	**Verification method**
a) assemble parts into a whole as required by their mutual alignment based on their function	Practical demonstration
b) check the surface alignment of connecting parts, measure planarity and collinearity; work with a shop rule, blade rule, water level, lamellar gauges, dial indicators, optical devices, etc.	Practical demonstration + measurement

c) check alignment, perpendicularity, peripheral and side run-out	Practical demonstration + measurement
d) perform an operational test (precision, faultless operation of hydraulic & pneumatic equipment, toughness, output at a prescribed load, controllability, etc.) of rotating machines	Practical demonstration
All of the above criteria have to be met.	

9. C.4.E.2.1.010 Maintenance, repairs and overhauls of machinery and equipment	
Evaluation criteria	**Verification method**
a) based on the knowledge of the functioning of structural nodes, assembly structures and structural arrangement and service documentation for machinery and equipment, prepare procedures for the assembly, maintenance and repairs of such machinery and equipment	In writing: explain, describe, substantiate
b) select suitable instruments, equipment, manual mechanized tools, machinery and equipment, and mechanization instruments for assembly, maintenance and repairs, which allow or facilitate the handling of the assembled parts of machinery and equipment, etc.	Orally or in writing : explain, describe, substantiate
c) determine a suitable method of an overhaul of parts of machinery and equipment, taking into account its desired reliability and service life	Orally or in writing : explain, describe, substantiate
d) maintain the compulsory documentation the operation of equipment, its technical state, defects, repairs, etc.	In writing: explain, describe, substantiate
e) to guarantee the operability of transportation devices, ensure that all spare parts and components necessary for the maintenance and planned repairs of transportation devices are kept in an optimal state	In writing: explain, describe, substantiate
All of the above criteria have to be met.	

10. C.4.E.1.1.001 Repairs and replacements of electrical parts of machinery, equipment and appliances, including the replacement of electronic components	
Evaluation criteria	**Verification method**
a) based on the knowledge of the functioning of structural nodes, assembly structures and structural arrangement and service documentation for electrical parts of machinery and equipment, prepare procedures for diagnosing its operating parameters and technical condition	Orally or in writing : explain, describe, substantiate
b) select suitable tools, instruments and devices to diagnose the technical state or defects in any structural nodes and assemblies of electrical parts of machinery and equipment, including the replacement of electronic components	Orally or in writing : explain, describe, substantiate
c) select suitable technical and handling tools for maintenance and repairs, based on the knowledge of the functioning of structural nodes, assembly structures and structural arrangement of electrical parts of machinery and equipment, including the replacement of electronic components	Orally or in writing : explain, describe, substantiate
d) manage the preparation of repairs of electrical parts of machinery and equipment, including the replacement of electronic components, based on the knowledge of the functioning of structural nodes, assembly structures and structural arrangement of electrical parts of machinery and equipment, including the replacement of electronic components	Orally: explain, describe, substantiate
All of the above criteria have to be met	

B. ORGANIZATIONAL AND METHODOLOGICAL INSTRUCTIONS

Examination Instructions

An authorized person determines which documents an applicant has to present in order for the exam to be conducted in accordance with current legal regulations, and determines the tools which the applicants will not be allowed to use during an examination.

Prior to the actual examination, an applicant must be shown around the workplace, and instructed about work safety, health protection and fire prevention requirements.

Examination should be conducted as a series of related activities, leading to a consistent repair job.

We recommend assigning any of the following activities:

- Read various types of technical documentation; be familiar with selections of standards; work with instruction manuals, etc.
- Choose a suitable work method, tools, equipment, instruments, auxiliary materials, gauges and machinery, assembly, repairs, overhaul and maintenance (see also **Technical Background Requirements**).
- Set up procedures for the assembly, maintenance and repairs of machinery and equipment, check the works performed.
- Assemble machinery and equipment into a whole, as required by its mutual alignment based on its function; perform operational tests of machinery, equipment, production lines, etc.

Verification of the prescribed criteria by means of a practical demonstration must take into account whether an applicant has performed all tasks safely, the quality of the final product, and the time needed by the applicant to perform all operations.

Final Evaluation

Applicants will be examined by a single examiner, who shall evaluate each competency separately, and enter the results in an evaluation report. Individual tasks may be evaluated using various marks, but the final evaluation for each competence must be either “pass” or “fail”, depending on whether the specific criterion for each competency is obligatory or not. The final evaluation shall either be “pass” in case the applicant has met the criteria for each competency, or “fail” in case the applicant has failed to meet the criteria for any of the competences.

Examination Board

Examination shall be carried out before a single authorized physical person, or a single authorized representative of an authorized organization.

Requirements for the Authorized Person’s Professional Qualification

An authorized person must have at least completed secondary education with the Maturita certificate, and must meet one of the following requirements:

a) Secondary education with apprenticeship certificate in the study field industrial mechanic, millwright, etc. + secondary education with the Maturita certificate (in another field), and at least 5 years of practice in a managerial position in the

relevant production sector, or as a practical training instructor, at least one year of which must be conducted within the last two years before applying for an authorization.

b) Secondary education with the Maturita certificate in the field of mechanical engineering or as a tool setting mechanic; and at least 5 years of practice in a managerial position in the relevant production sector, or as a practical training instructor, at least one year of which must be conducted within the last two years before applying for an authorization.
c) Tertiary vocational education in the field of mechanical engineering, and at least 5 years of practice in a managerial position in the relevant production sector, or as a practical training instructor, at least one year of which must be conducted within the last two years before applying for an authorization.
d) University education in the field of mechanical engineering, and at least 5 years of practice in a managerial position in the relevant production sector, or as a practical training instructor, at least one year of which must be conducted within the last two years before applying for an authorization.

Other requirements:

- An authorized person which does not possess the professional qualification required by the relevant provisions of Act No. 563/2004 Sb. on Pedagogical Staff, as amended, or does not have the required practical experience in the field of educating adults (including examination practice) must complete a training focusing on the recognition of non-formal and informal learning, or a training focusing on the basic pedagogical knowledge, centred on examination practice, in the scope of at least 12 lessons.
- An authorized person must possess basic computer and internet skills (only a statutory declaration is required).
- An authorized person must be capable of organizing the examination, including computer evaluation, printing of certificates and sending them out by e-mail (only a statutory declaration is required).

Applicants for authorization must prove that they have met all requirements regarding their professional qualification, by presenting a document or a set of documents proving their professional credentials to the authorising institution, or by any other means prescribed by the authorising institution.

Technical Background Requirements

To organize an examination pursuant to this evaluation standard, at least the following technical background is required:

- suitable premises and power supply compliant with relevant safety and hygiene regulations;
- repair workshop;
- suitable work clothing;
- tools for fixing marked out parts and raw products (jack screws, wedge blocks, prisms, seat angles, clamps, deviation meters, etc.);
- standard marking-off equipment and fixing tools (ruling needles, compasses, centre punches, hammers, slide rules, lamellar rules, micrometres, angle gauges, seat angles, water levels, etc.);

– measuring instruments (lamellar and bar rules, slide rules, micrometres, angle gauges, seat angles, water levels, etc.); – documentation for the repaired machinery and equipment, etc.; – shop tables and selections of standards, instruction manuals, etc. – materials, tools, instruments, manual mechanized tools, machinery and equipment enabling the handling of machinery and equipment parts. Applicants shall accompany their authorization applications with a list of their technical equipment for conducting examinations. Should an applicant utilize another organization's technical and material equipment, they shall attach to their application a contract on such utilization or rent, concluded for a minimum of five years.
Examination preparation time and duration of examination Candidates will be allowed 45 to 75 minutes of preparation (including the time required for the candidate to prepare during the actual examination). Preparation time shall not include the time required for the candidate to familiarize themselves with the workplace and receive instructions regarding work safety, health protection and five prevention. The actual examination shall take up 9.5 to 10.5 hours (not including breaks and preparation time; an hour equals 60 minutes). The examination may be divided in several days, depending on the tasks assigned.
Examination Fee The examination fee shall be from CZK 0 to CZK 8,300 excluding VAT. Each authorized person shall set up their own examination fee.
Authorising institution Ministry of industry and trade
Relation to specific occupations (and/or TP): Industrial mechanic Operational mechanic and assembler Mining mechanic Mining rescue service mechanic Steel structure assembler Rotating machines assembler Ventilation system assembler Operating mechanic

Relation of vocational qualification to full qualification

Type of vocational qualification	Field of study code and name

integrating	23-51-H/01 Industrial Machinery Mechanic

IV. Certification of the referencing report

Decision of the Cabinet

VLÁDA ČESKÉ REPUBLIKY

USNESENÍ

VLÁDY ČESKÉ REPUBLIKY
ze dne 20. července 2011 č. 557

o Národní přiřazovací zprávě České republiky

Vláda

I. **schvaluje** Národní přiřazovací zprávu České republiky, obsaženou v části III materiálu č.j. 700/11 (dále jen „Zpráva“);

II. **pověřuje** ministra školství, mládeže a tělovýchovy předložit Zprávu do 31. prosince 2011 Evropské komisi;

III. **ukládá** ministru školství, mládeže a tělovýchovy Zprávu podle potřeby revidovat a aktuální verzi zveřejňovat v elektronické podobě způsobem umožňujícím dálkový přístup.

Provede:

ministr školství, mládeže a tělovýchovy

Předseda vlády
RNDr. Petr Nečas

v z. Karel Schwarzenberg, v. r.
1. místopředseda vlády

Translation:

Decision

of the Cabinet of the Czech Republic

meeting on 20 July 2011, no. 557

on the National Referencing Report of the Czech Republic

The Cabinet

I **approves** the National Referencing Report of the Czech Republic, contained in Part III, ref. no. 700/11 (hereinafter refered to as the Report);

II **entrusts** the Minister of Education, Youth and Sports with submitting the Report to the European Commission by 31 December 2011;

III **orders** the Minister of Education, Youth and Sports to keep the Report up to date and to make the latest version publicly available in electronic format.

To be implemented by:

the Minister of Education, Youth and Sports

Karel Schwarzenberg
First Deputy Prime Minister,
standing in for
the Prime Minister
Petr Nečas

V. Agreement of the quality assurance bodies

Agreement of the Czech School Inspectorate:

ČESKÁ ŠKOLNÍ INSPEKCE

Fráni Šrámka 37, 150 21 Praha 5
tel.: 251 023 242, 251 023 111
fax.: 251 023 130

Date: 20.6.2011

Ref No: ČŠIG-1779/11-G20

Stated Agreement to the Referencing Process

The Czech School Inspectorate participated in the referencing process and hereby certifies that Criterion 5 –*The national quality assurance system(s) for education and training refer(s) to the national qualifications framework or system and are consistent with the relevant European principles and guidelines (as indicated in Annex III of the Recommendation)* – has been fulfilled, and agrees to the results of the referencing process described in the national referencing report.

On behalf of the Czech School Inspectorate,

Mgr. Tomáš Zatloukal
Deputy Chief School Inspector

Agreement of the Accreditation Commission:

ACCREDITATION COMMISSION
CZECH REPUBLIC
AKREDITAČNÍ KOMISE
ČESKÁ REPUBLIKA
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☎ + 420 234 811 488; fax: + 420 234 811 351; e-mail: smrckaj@msmt.cz

In Prague, 17th June 2011

Ref No: 18165/2011-M3

Stated Agreement to the Referencing Process

The Accreditation Commission Czech Republic participated in the referencing process and hereby certifies that Criterion 5 –*The national quality assurance system(s) for education and training refer(s) to the national qualifications framework or system and are consistent with the relevant European principles and guidelines (as indicated in Annex III of the Recommendation)* – has been fulfilled, and agrees to the results of the referencing process described in the national referencing report.

On behalf of the Accreditation Commission,

PhDr. Jiří Smrčka, Ph.D.

Secretary to the Accreditation Commission Czech Republic

National Referencing Report of the Czech Republic

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National Referencing Report of the Czech Republic

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