

**The procedure of transfer of qualifications
in the profession production process organizer
developed during the project
European Qualification Framework – a tool linking
various systems of teaching Production Process
Organizers – according to the MES methodology
for national and European Qualification
Frameworks**

dr inż. Krzysztof Symela



Training materials developed in the project
“European Qualifications Framework –a tool linking various systems
of teaching Production Process Organizers”.

This project has been funded with support from the European Commission
under the Lifelong Learning Programme.

This publication reflects the views only
of the author, and the Commission cannot be held responsible for any use
which may be made of the information contained therein.



Introduction

Identification, description and comparison of qualifications in the national and European dimension requires the use of appropriate regulating instruments. The key document common for all European countries is in this respect the *Recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualification Framework for Lifelong Learning*.

The European Qualification Framework (EQF) is the common European reference system, which connects different countries' national systems and frameworks. In our country the National Framework for Polish Higher Education¹ has been adopted and the Polish Qualification Framework (PRK), the counterpart of the National Qualification Framework (NQF) is still being established. PRK has 8 levels of qualification which correspond to the eight respective levels of the EQF. These levels represent the full qualification scale, from elementary to advanced levels. In practice the system will function as a translation tool making qualifications more transparent and clear for the educational systems and the job market. This will help learners and employees who intend to move between countries or change jobs or educational institutions in their own countries.

The final result of introducing the Framework in all Europe should be a dynamic "map" of qualifications typical for all levels of European and national Frameworks. It will depict the relationships between qualifications, indicate transfer paths and possibilities of continuing education on both academic and pre-academic level in the perspective of lifelong learning. The new way of defining qualifications will also be beneficial to employees and employers, giving them a clear description of learning results (knowledge, skills and competences) of a person (job candidate) who submits a diploma or certificates as a proof of their qualifications.

The procedure of "qualification transfer" developed as part of this project concerns the qualifications identified for the profession **Production Process Organizer** for the European Qualification Framework (EQF), the National Qualification Framework (NQF) is an original proposition of the partnership (Poland, Bulgaria, Greece and Slovakia) describing training achievements (criteria: knowledge, skills, competences) for management and top management of production companies. The "qualification transfer" is hereby understood as a way of identifying, defining and matching (transferring) qualifications with respective European levels and national frameworks.

¹ Program autonomy of the academy/university. Qualification Framework for Higher Education. Project of the Ministry of Science and Higher Education *National Qualification Framework in Higher Education as a tool of improvement of education quality* Priority IV of the Human Capital Programme, Activity 4.1. Sub-action 4.1.3, Warsaw 2010.

Terminology

In order to develop the procedure a system of terms related to the EQF/NQF has been adopted as well as terminology from the MES method (Tab. 1) which was applied in the project to develop a modular training offer for the profession "Production Process Organizer".

Table 1. The used terminology system

Term	Definition
Terminology from European² documents and work on the National Qualification Framework³	
Learning achievements	What a learner knows, understands and can carry out after completing the learning process, defined in the categories of knowledge, skills and competences (personal and social).
Training achievements	What a learner, who participates in an training process in an educational institution, knows, understands and can carry out after completing the education, defined in categories such as knowledge, skills and personal and social competences.
Skills	Ability to apply knowledge and trained skills to carry out tasks and solve problems. In the EQF context skills are defined as cognitive skills (involving logical, intuitive and creative thinking) and practical skills (involving dexterity and application of methods, materials, tools and instruments).
Knowledge	A sum of interconnected facts, rules, theories and experiences acquired by the learner. The EQF differentiates between theoretical and factual knowledge.
Competences	Everything a person knows, understands and can carry out, i.e. the person's cumulated learning achievements. It is also a proven ability to apply knowledge, skills as well as personal, social and methodological competences, which is demonstrated during work or learning and in the personal and professional career; In the European Qualification Framework competences are defined in the categories of responsibility and autonomy.
Qualification	A diploma, certificate or other document issued by an authorized institution, stating that a person has attained learning achievements according to specified requirements.
Statement of qualifications	The process of confirmation by an authorized institution, that a person has attained the learning achievements according to specified requirements.
Recognition of qualifications	Formal recognition by an authorized institution of the value of a qualification achieved abroad in order to use it in one's own country for further education or on the job market.
Social competences	A proven (at work, during education and personal development) ability to apply the possessed knowledge and skills in accordance with an internalized value system. Social competences are determined based on categories of responsibility and autonomy. ⁴
National Qualification System	All activities of the state connected with the certification of learning achievements required by the job market and the civil society and aiming at the individual development of learners, based on the National Qualification

² Based on: Recommendation of the European Parliament and of the Council of 29 January 2008 on the establishment of the European Qualification Framework (EQF) for Lifelong Learning.

³ Definitions of the National Qualification Framework were adopted with the resolution of the Steering Committee for National Qualification Framework for Lifelong Learning on 29 July 2010 (MNiSW).

⁴ Based on: *Słownik kluczowych pojęć związanych z krajowym systemem kwalifikacji*, Instytut Badań Edukacyjnych, Warszawa 20011.

	Framework. It includes in particular awarding and recognition of qualifications as well as assuring the quality of qualifications.
National Qualification Framework (NQF)	A description of mutual relationships between qualifications, integrating different national qualification subsystems. It is aimed at improving transparency, availability and quality of qualifications and is created to satisfy the needs of the job market and the civil society. It contains in particular a description of qualification levels – every qualification is put on one of those levels. To each of these levels a corresponding level in the European Qualification Framework is assigned.
Qualification level	A separate category of qualifications, characterized by a common set of general requirements for learning achievements including in particular all requirements that define one of the levels of the European Qualification Framework.
European Qualification Framework (EQF)	A reference system adopted in Europe which enables a comparison of qualifications acquired in different countries. In the European Qualification Framework eight levels of qualifications have been defined – from the lowest level of obligatory education (level 1) to the highest level of academic education (level 8) – these levels have been defined by the requirements for learning achievements.
Terminology in the MES⁵ methodology	
Modular Training Program	A document of professional training (developed according to the MES methodology – <i>Module of Employable Skills</i>) which defines the scope and structure of the teaching and learning content which result from the professional tasks in a given profession. These are reflected by the module units.
Professional skills module	Job specification in the form of module units. It defines the professional tasks carried out within the profession in form of module units.
Module unit	A part of professional training module (or professional skills module) which includes a logical and feasible fragment of work with a precisely defined beginning and end, which is not further divisible and corresponds to a professional task. Its result is a product, service or an important decision.
Training unit	A form of recording content and organizing training classes in the MES system. It enables a systematic planning and preparation of classes by trainers, teachers, lecturers or instructors.
Professional task	A logical fragment of work in a profession with a clearly defined beginning and end. A system of professional activities connected with one objective, ending with a defined product, service or important decision. It corresponds to a module unit in the modular training program.
Profession	A set of professional tasks identified in the course of social work division, which requires certain professional qualifications from the worker.

⁵ Based on: Symela K. - *Poradnik metodyczny dla autorów modułowych programów szkolenia zawodowego*, ITeE-PIB, Radom 2009.

1. The procedure of transfer of qualifications typical for the profession *Production Process Organizer* into the EQF and the NQF.

1.1. Procedure of identifying qualifications for the profession *Production Process Organizer* and placing them in the modular training program.

In the course of the experts' work and research in the organizations in partner countries⁶ four "partial" qualifications have been identified in the model of the profession "Production Process Organizer". These qualifications correspond to "complex" and "component" qualifications defined in the dictionary of keywords of the national qualification system (*Słownik kluczowych pojęć związanych z krajowym systemem kwalifikacji IBE*, 2011) (Fig. 1).

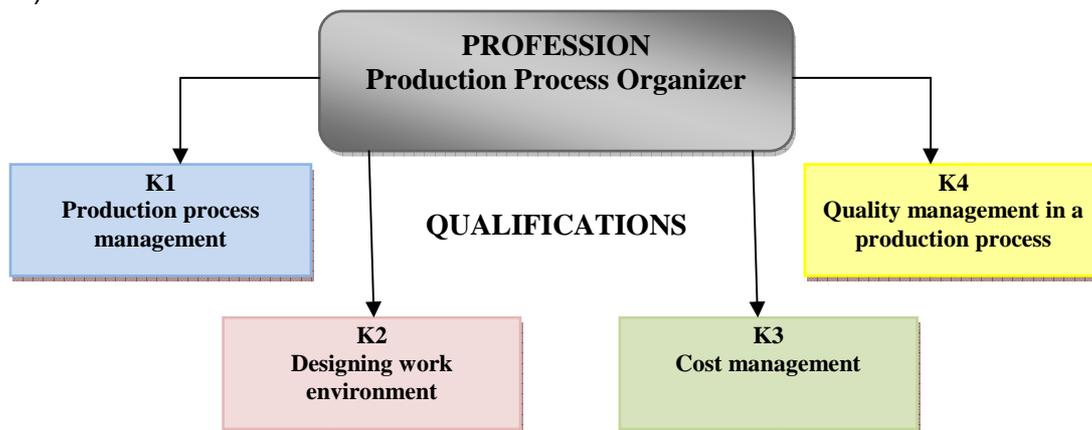


Fig. 1. Qualifications identified in the profession *Production Process Organizer*.

The qualifications identified in the profession have been determined based on a logical system of mutually correlated **professional tasks** carried out in a production process, which was shown in Table 2 – Matrix of correlation of professional tasks with qualifications.

As we can observe, one professional qualification (a partial qualification identified in the profession) consists of many professional tasks carried out in the work process. For qualification K1=23 tasks, K2=5 tasks, K3=6 tasks, K4=7 tasks. A large part of the professional tasks (tasks: 1, 6, 8, 15, 20, 24, 25, 26, 27, 28, 29 – in red in Tab. 2) can be found in different qualifications, which confirms their need in various contexts and situations of the production process. At the same time it proves that the defined qualifications are useful for broader or narrower job profiles in an organization, which can be applicable to the production process organizer, for example in medium and large enterprises starting from the position of plant manager, through unit manager and specialist, down to foreman, and in small enterprises a specialist or even plant manager.

⁶ The EU Leonardo da Vinci Project, *European Qualification Framework – a tool to connect different systems of education of Production Process Organizers*. Research report. Warsaw, March 2010.

Table 2. Matrix of correlations of professional tasks with qualifications identified in the profession *Production Process Organizer*

No.	Name of professional task carried out in the work process	Name of the qualification in the profession			
		K1 Production process management	K2 Designing work environment	K3 Cost management	K4 Quality management in a production process
1.	Production process planning and organization	X	X		
2.	Resources planning (people, machines, materials)	X			
3.	Quality planning in a production processes				X
4.	Balancing and optimization of production capacities	X			
5.	Improvement and optimization of production processes	X			
6.	Subordinate management	X	X	X	X
7.	Designing optimal organization of work and work stations		X		
8.	Management of production related costs.			X	X
9.	Monitoring execution of current production plans	X			
10.	Material requirements management	X			
11.	Improvement and optimization of working time	X			
12.	Stock material management	X			
13.	Quality control in a production process				X
14.	Analyses of investment profitability			X	
15.	Production cost optimization and reduction	X		X	
16.	Organization of launching new technologies and machines in production area	X			
17.	Using statistical methods in quality management				X
18.	Analysis and improvement of logistics processes	X			
19.	Assisting in implementation of information technology in the production area	X			
20.	Management of projects and investments in a production process	X		X	
21.	Maintenance management	X			
22.	Tool management	X			
23.	Energy management	X			
24.	Production budgeting	X		X	
25.	Management of product development	X			X
26.	Ecology oriented production management - "Clean production"	X			X
27.	Safety management in production systems	X			X
28.	Vocational development of employees	X	X		
29.	Employment and job evaluation	X	X		
Number of professional tasks in one qualification		23	5	6	7

On the other hand the analysis of professional tasks conducted by experts has become the basis for determining and naming training units in the modular training program for the profession *Production Process Organizer*. The final result of the analysis is shown in Table 3. where we can observe, which training units must be completed in order in order to obtain a partial qualification in the profession.

Table 3. Matrix of correlations of training units with qualifications identified in the profession *Production Process Operator*

Code	Name of training unit	Qualifications identified in the profession			
		K1	K2	K3	K4
JS-001	Work system	•	•		
JS-002	Work organization	•	•	•	•
JS-003	Task analysis and evaluation	•	•	•	
JS-004	Block diagrams in process analysis	•	•		
JS-005	Processes in a company	•	•	•	
JS-006	Designing and simulation of material flow	•		•	
JS-007	Resource planning - production capacity management	•		•	
JS-008	Resource planning - flextime	•			
JS-009	Resource planning - materials management	•			
JS-010	Quality management - introduction				•
JS-011	Quality management systems				•
JS-012	Quality planning				•
JS-013	FMEA (Failure Mode and Effects Analysis)				•
JS-014	Quality control, fault origin and fault copying				•
JS-015	Quality management related to procurement				•
JS-016	Quality management related to production	•			•
JS-017	Continuous improvement process (KVP/Kaizen)	•	•	•	
JS-018	Simulation game – methods of process and task planning in practice	•	•		
JS-019	Creativity and generating ideas	•			
JS-020	Management	•	•	•	•
JS-021	Communication	•	•	•	•
JS-022	Motivation	•	•	•	•
JS-023	Presentation	•	•	•	•
JS-024	Moderation	•	•	•	•
JS-025	Team work	•	•	•	•
JS-026	Conflict and methods of conflict resolution	•	•	•	•
JS-027	The systematic method – basics		•		
JS-028	Shaping human work system		•		
JS-029	Workload and work nuisance and their effects	•	•		
JS-030	Anthropometry and means of production	•	•		
JS-031	Work environment	•	•		
JS-032	Cost accounting	•		•	•
JS-033	Cost accounting and activity based costing	•		•	•
JS-034	Cost accounting as an instrument of management			•	•
JS-035	Costs by type	•		•	•

JS-036	Cost centres accounting	•		•	•
JS-037	Costs drivers accounting based on total costs	•		•	•
JS-038	Costs drivers accounting based on partial costs	•		•	•
JS-039	Costs drivers accounting based on process costs	•		•	•
JS-040	Strategy and planning methods	•		•	
JS-041	Numbering, coding	•			
JS-042	Planning tools, product structuring, specification, usage list	•			
JS-043	Work plan	•			
JS-044	Process planning - flow time, scheduling	•	•		
JS-045	Process analysis and the basis of determining working time standards	•			
JS-046	Basic information on time measurement (production)	•			
JS-047	Assessment of the pace of work	•			
JS-048	Execution and analysis of working time measurement	•			
JS-049	Measurement of allowance time	•			
JS-050	Recovery time	•			
JS-051	Teamwork – time determination	•			
JS-052	Multi-station work – time determination	•			
JS-053	Process assessment and indicators	•			
JS-054	Work sampling	•			
JS-055	Comparison and estimation (production)	•			
JS-056	Predefined motion time system (MTM)	•			
JS-057	Interview technique – individual recording	•			
JS-058	Operational data collection (BDE)	•	•		
JS-059	Working time standards	•			
JS-060	Quality testing and statistical process control				•
JS-061	Control planning - outline				•
JS-062	Measuring devices and their control				•
JS-063	Control planning – random inspection				•
JS-064	Methods of profitability accounting	•		•	
JS-065	Process management	•	•		
JS-066	Controlling in logistics	•			
JS-067	Descriptive statistics				•
JS-068	Introduction to correlation and regression				•
JS-069	Project planning	•		•	
JS-070	Project organization	•		•	
JS-071	Project controlling	•		•	
JS-072	Planning and management of maintenance tasks	•			
JS-073	Basic information about OSH regulations		•		
JS-074	Employment law	•	•	•	•
JS-075	Introduction to process data management	•	•		
JS-076	Group work	•	•	•	•
JS-077	Flex time schedules	•	•		
JS-078	Flexible remuneration systems			•	•
JS-079	Requirements determination	•	•	•	•
JS-080	Work instruction and vocational training	•	•	•	•
JS-081	Data and time management. Example of a situation	•		•	

JS-082	Design of experiments		•		
JS-083	Basic project documentation	•		•	
JS-084	Developing a project plan – case study	•		•	
JS-085	Target Costing	•		•	•
JS-086	Pay policy	•	•	•	•
JS-087	Pay differentiation	•	•	•	•
JS-088	Strategic planning	•	•	•	
JS-089	Benchmarking	•	•		
JS-090	Marketing planning	•	•		
JS-091	Case study: company organization	•	•	•	
JS-092	Company's annual report	•	•	•	
JS-093	Indicator analysis	•		•	
JS-094	Balanced Scorecard	•	•		
JS-095	Investment accounting	•	•	•	
JS-096	Awareness and implementation of the national and European regulations in the field of environmental protection	•			•
JS-097	Initiatives and innovations in the field of environmental protection	•			•
JS-098	Training programs design and implementation.	•			•
JS-099	Taking investment decisions	•			•
JS-100	Standardization	•			•
JS-101	Awareness and implementation of the national and European regulations in the field of H & S	•			•
JS-102	Development of policies of H & S	•			•
JS-103	Provision of safe working conditions	•			•
JS-104	Risk assessment	•			•
JS-105	Risk reduction on a work place	•			•
JS-106	Assessment of employees	•	•		
JS-107	Recruitment and selection of employees	•	•		
JS-108	Learn through work	•	•		
JS-109	Flexible production plan	•			
JS-110	Process flow development	•			
JS-111	Improvement process in resource planning	•			
JS-112	Power management, planning, organization and realization of project	•			
JS-113	Teamwork and motivation of employees for power management	•			
JS-114	Improvement process in power management	•			
JS-115	Maintenance concepts in production	•			
JS-116	TPM Programme	•			
JS-117	Improvement process in the area of maintenance	•			
Number of training units for one qualification:		99	42	42	47

The developed matrix of correlations shows that a significant number of training units repeats (is reused) in “qualification paths” of one partial qualification. This is important when there is a need to develop a modular training program for one qualification “separately” from other qualifications. In such cases once a training unit is completed by a trainee, e.g. JS-002 in the training program for qualification K1, it is omitted in the same trainee’s training path for

qualifications K2, K3 and K4 (see Tab. 3. pos. JS-002). Therefore (according to the MES methodology) training units that are common to qualifications within one profession can be omitted in a trainee's individual training program, if the trainee previously obtained a qualification in which there was a training unit with identical content. In the modular training program for qualifications in the profession *Production Process Organizer* there are:

- K1 – Production process management – 99 training units,
- K2 – Designing work environment – 42 training units,
- K3 – Cost management – 42 training units,
- K4 – Quality management in a production process – 47 training units.

The training achievements required for each qualification have been described in detail in the programs for particular training units which form a separate elaboration (project result).

1.2. Identification and hierarchization of qualification levels in the profession *Production Process Organizer* in the context of EQF/NQF

The key problem that needed to be solved when defining training achievements for the qualifications identified in the profession *Production Process Organizer* was determining the EQF/NQF levels in which they should be placed. For the identification and hierarchization of qualification levels the experts used the following set of criteria:

- Scopes of responsibility and autonomy required in job positions, in which production process organizer can be employed, including relevant ethical, social and professional issues.
- Required (preferred) formal education for employment in jobs typical for this profession.
- Descriptions of the criteria of training achievements (knowledge, skills, competences) for the levels 5-7 according to the EQF, the Qualification Framework for Higher Education and Polish Qualification Framework (documents from the public consultation by the IBE were used).

The result of applying the above mentioned criteria is shown in Table 4 in form of correlations of job positions, education requirements and selected levels of the EQF/NQF.

Table 4. Correlation of job positions, employment requirements for qualifications of the profession *Production Process Organizer* with levels of the EQF/NQF

Names of typical positions in companies where a <i>Production Process Organizer</i> can be employed	Education required in the job position (minimum level of education)			Preferred level of qualification (EQF/NQF)		
	Secondary education	Higher education level I	Higher education level II	5	6	7
1. Chief technologist		•	•		x	
2. Chief constructor		•	•		x	
3. Process engineer		•	•	x	x	
4. Product engineer		•	•	x	x	
5. Project engineer		•	•	x	x	
6. Production manager		•	•		x	
7. Shift master/foreman	•			x	x	
8. Maintenance manager		•	•		x	
9. R&D manager			•		x	
10. Production setup manager		•	•		x	
11. Logistics manager		•	•		x	
12. Production planning manager		•	•		x	
13. Quality manager			•			x
14. Quality director			•			x
15. Technical director			•			x
16. Administrative director			•			x

The education level preferred by employers (secondary education, levels I and II of higher education) and required in the positions typical for this profession was the reference for the interest in qualification levels 5 to 7 of the EQF/NQF and also refers to the works on the Polish Qualification Framework.⁷

In the above mentioned context the professional (partial) qualifications identified in the profession *Production Process Organizer* were assigned to levels 5-7 of the EQF/NQF, as proposed in the Table 5. Correlation of professional tasks and qualifications in the profession is a fundamental element of defining qualification levels and describing training achievements.

7 ...In the National (Polish) Qualification Framework secondary education corresponds to levels 1-4 and academic education to levels 6-8. In Poland level 5 is typical for extra-scholarly and extra-academic education... according to Kwiatkowski S. M.: European and National Qualification Framework. In: Korzystajmy z doświadczeń – międzynarodowe partnerstwo w edukacji drogą do poprawy efektywności europejskiego szkolnictwa zawodowego. Zespół Szkół Budowlanych Nr 1 w Płocku (red.), 2011, p. 18.

Table 5. Correlation of qualifications in the profession *Production Process Organizer* with the EQF and NQF.

Profession – Production Process Organizer			
Name of “partial” qualifications identified in the profession	EQF/NQF level		
	Level 5	Level 6	Level 7
K1 – Production process management	X	X	X
K2 – Designing work environment	X	X	X
K3 – Cost management		X	X
K4 – Quality management in a production process			X

Another problem that required a solution was: Do training achievements for a qualification in a higher level of hierarchy include all the achievements from a lower level? Mainly the following issues needed to be considered:

- maintaining the EQF/NQF’s rule of progression of training achievements, meaning that with passing to a higher qualification level the training “increases” training achievements in three dimensions: knowledge, skills, competences.
- ensuring “openness” and accessibility of the modular training offer for the profession *Production Process Organizer* for candidates with different initial education.

Transitions between levels (from 5 to 7) mean a qualitative change described by the training achievements. The higher the qualification level, the more complex the work and the higher the responsibility for it.

When analyzing the content of tables with the description of training achievements for particular qualifications (presented further in the elaboration) we can observe the progression of learning achievements with passing to the next level of qualification. This progression is related to the nature of the acquired knowledge (basic, specialist, advanced), the complexity of skills (standard, specific and atypical works) and range of competences (personal, social, managerial) of an employee with regard to the degree of independence and responsibility for their own work and the work of their personnel.

The above mentioned criteria applied to the description of training achievements were considered during the determination of EQF/NQF qualification levels for “Production Process Organizer”. Following assumptions were made:

- A Production Process Organizer in **qualification level 5** carries out standard and non-standard professional tasks related to production process management and designing work environment, whose complexity requires the ability to solve typical and atypical problems of a production activity of a certain profile (field). He/she can manage a small

(several members) team of workers and is responsible for the consequences of their own actions as well as the actions of the managed team. An employee with this level of qualification is predisposed to working in the position of a master/foreman (or a comparable position) in the company.

- A Production Process Organizer in **qualification level 6** carries out many different professional tasks which are often complicated and problematic, including cost management. These require technical, organizational and specialized skills. These tasks also require a high degree of autonomy along with the sense of high personal responsibility. He/she can manage medium and large teams of workers (from several to several dozens of members) divided into teams. An employee with this level of qualification is predisposed to working in the position of a manager (of a department, division) or a comparable position in the company.
- A Production Process Organizer in **qualification level 7** manages the company and makes decisions that are strategic to the operation and development of the company. He/she specializes in quality management of a production process. He/she can analyze, diagnose and forecast a complex economic situation of the company and implement the most suitable ideas and solutions into the organizational practice. As a fully autonomous manager he/she acts in problem situations and takes responsibility and risk of the decisions made and the implemented actions. He/she also takes responsibility for the continuous improvement of the company's human resources' qualifications and competences. An employee at this level of qualification is predisposed to working as a director.

All qualifications assigned to a particular level of the EQF/NQF have been defined by training achievements which will be the basic criterion for awarding qualifications. It is at the same time a requirement to achieve further levels of professional career such as foreman/master, manager, director.

It is also assumed that each of the four qualifications identified in the profession "Production Process Organizer" can be confirmed (certified) independently in the course of non-formal learning or be a basis for specialized (profiled) training in the course of formal training, especially for professions with management, economic or technical profile. From this perspective the qualifications in the profession "Production Process Organizer" are the equivalent of "complex" qualifications (in the sense of the PRK), which are defined by a set of training achievements for particular "partial" qualifications (K1, K2, K3, K4). Partial qualifications can be confirmed separately and lead to obtaining a complete qualification for the profession.

Such approach forced a logical application of the rules and structure of the European Qualification Framework⁸ and the Polish Qualification Framework (PRK)⁹, as well as the Qualification Framework for Higher Education¹⁰ (in Poland) which describe qualification as training achievements in 8 levels which are independent from all entry variables such as specific professional requirements, individual training paths and individual forms of learning as well as education and vocational training systems typical for particular countries involved in the project. In consequence none of the areas in which qualifications are awarded (education, higher education, job market) has the exclusive right to award qualifications in the defined levels. This also applies to higher education – the Bachelor, Master and Doctor degrees are no longer the only basis for recognition of respective qualifications according to the EQF levels in the EU. **Application for these levels is also possible for participants of advanced vocational trainings organized outside the academic and pre-academic education as well as of advanced economic projects with high level of competences of the participants, irrespective of their formal education.**¹¹ The qualifications in the profession “Production Process Organizer” are the best example. For each qualification in this profession the required training (learning) achievements have been defined and operationalized (refined) in programs for particular training units developed according to the MES methodology.

1.3. Correlation of training units to qualifications and their levels according to the EQF/NQF

The descriptions of training units developed in the project are aimed at achieving the training effects and these in turn enable defining qualifications identified in the profession “Production Process Organizer”. Each of the 117 training units has a correlation to an EQF/NQF level as shown in the example below.

The example shows that the training unit JS-25 – *Teamwork* is correlated to professional task JM6 – *Subordinate management*, and that task is assigned to all four qualifications according to Table 2. Thus, if the training unit is included in the professional task which is common to all qualifications – as it is the case in the example – then the unit is necessary to achieve the qualification levels 5, 6 and 7, because as a rule the qualifications of a higher

8 Recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualification Framework for Lifelong Learning (2008/C 111/01).

9 The work on the Polish Qualification Framework is conducted by Instytut Badań Edukacyjnych as part of the system project under the Human Capital Programme. For the development of this elaboration working materials from the process of public consultation was used, because the official final version of the PRK model has not yet been published.

10 Program autonomy of the academy/university. Qualification Framework for Higher Education. Project (priority IV of the Human Capital Programme) – National Qualification Framework in Higher Education as an instrument of improvement of education quality. MNiSzW Warszawa, October 2010.

11 The perspective of lifelong learning. The draft of the strategic document developed by the interdepartmental team for lifelong learning including the National Qualification Framework, Warsaw 4th February 2011.

level include the qualifications of a lower level of the hierarchy of qualification levels. And all four qualifications are required to work in this profession in different positions (see Table 4). This correlation is visible below with the qualifications according to the EQF/NQF levels. As a result, the training unit JS-25 is part of the preparation of the four partial qualifications K1, K2, K3 and K4 which altogether constitute a complete qualification in the profession.

An analogous algorithm has been applied for all training units. First, we analyze the correlation of the training units to professional tasks (Table 3), then the correlation of professional tasks to the qualifications (Table 2) and finally, the correlation of qualifications to the positions (Table 4) and the EQF/NQF qualification levels (Table 5). The result of this analysis is shown in the description of each training unit by indicating the correlation of that training unit (which describes the training achievements) to the qualifications and levels of the EQF/NQF.

Description of training unit [JS-025/JM-6] - excerpt

Name and code of training unit: Teamwork JS-025		Objectives: At the end of this training unit the participant will be able to:	
Correlated with module units / tasks: JM-6 _Subordinate management		<ol style="list-style-type: none"> 1. Deal with difficult situations as part of the teamwork. 2. Use the qualities of an effective team. 3. Organize team work. 	
Correlation to qualifications and levels according to EQF/NQF: Production process management K1_P5-6-7/5-6-7 Designing work environment K2_P5-6-7/5-6-7 Cost Management K1_P5-6-7/5-6-7 Quality management in a production process K4_P5-6-7/5-6-7			
Profession / position: Production Process Organizer			
No.	Key subjects	Training methods	Teaching aids, equipment and materials
1	Difficult situations as part of teamwork.	Lecture, role play, workshop	<ul style="list-style-type: none"> • Presentation devices: notebook, video projector, screen • Flipchart • Thematic PowerPoint presentations • Set of plastic sticks – 1 m long • Tennis balls • Small buckets. • Pens, markers
2	Qualities of an effective team.	Lecture with a quiz, personality test	
3	Organizing group work.	Lecture, brainstorming, workshop	
Approximate time to complete the training unit: 8 hours			

The analysis of the example shows that in the description of each training unit there is the element of training achievements “Key subjects” which corresponds to “knowledge”. “Objectives” correspond to shaping “skills” and acquiring personal and social “competences”. That last component was broadly described by the experts in the further part of the elaboration in tables with training achievements for the profession *Production Process Organizer*.

2. Training achievements tables for the profession of a *Production Process Organizer* including the EQF and NQF levels

2.1. Description of the profession *Production Process Organizer*

A profession description with qualifications portfolio for the profession of a *Production Process Organizer* has been created as a result of studies and projects. This description can form a base for applying an introduction of a new profession to the International Standard Classification of Occupations for Labour market (Ministry of Labour and Social Policy of Poland).

Profession description

Synthesis:

The responsibilities of a *Production Process Organizer* consist of the following: all issues connected with production planning and organization in a company, especially production processes management, designing work environment, cost and quality management in a production process. In large and medium-sized enterprises a *Production Process Organizer* can perform the function of a managing director, a head of a functional unit (e.g. production manager, maintenance manager, production setup manager, logistics manager, production planning manager, R&D manager), a specialist (e.g. chief technologist, chief constructor, process engineer, product engineer, project engineer), a master or a foreman. In small enterprises a *Production Process Organizer* usually can perform the function of a specialist or the company's director.

Profession related tasks:

- Production process planning and organization.
- Resources planning (people, machines, materials)
- Quality planning in a production processes
- Balancing and optimization of production capacities
- Improvement and optimization of production processes
- Subordinate management
- Designing optimal organization of work and work stations.
- Management of production related costs.
- Monitoring execution of current production plans
- Material requirements management
- Improvement and optimization of working time
- Stock material management

- Quality control in a production process
- Analyses of investment profitability
- Production cost optimization and reduction
- Organization of launching new technologies and machines in a production area
- Using statistical methods in quality management
- Analysis and improvement of logistics processes
- Assisting in implementation of information technology in the production area
- Management of projects and investments in a production process
- Maintenance management
- Tool management
- Energy management
- Production budgeting
- Management of product development
- Ecology oriented production management
- Safety management in production systems
- Human resources management in the production area
- Employment and job evaluation

Additional profession related tasks:

- Coordination of activities between the sales and production department related to introduction of new products
- Assisting in developing and executing the marketing policy of a production company
- Sales supporting by technical advising and product trainings

2.2. General training achievement portfolio for the profession *Production Process Organizer*

The general training achievement portfolio for the profession of *Production Process Organizer* includes the following partial qualifications: K1, K2, K3 and K4 (Table 6). It has been created based on three criteria: knowledge, skills, competence. In its general (outcome) form the “knowledge” comes from names of the training units that a MES-method-based modular training program is divided into. The “skills” are based on profession-related tasks which cannot be executed without them while performing the job. Finally the “social competence” portfolio is a suggestion that comes from the expectations of employers and experts participating in the project. Furthermore it includes the aspect of responsibility and independence, according to the EQF requirements.

Table 6. General training achievement portfolio for the profession of a *Production Process Organizer*

<p style="text-align: center;">Knowledge</p> <p>Has professional knowledge of:</p>	<p style="text-align: center;">Skills</p> <p>Has professional skills needed to:</p>	<p style="text-align: center;">Social competences</p> <p>Is able/ready to:</p>
<ul style="list-style-type: none"> - Work system - Rules of work organizing - Task analysis and evaluation - Block diagrams in process analysis - Processes in a company - Designing and simulation of material flow - Resource planning - production capacity management - Resource planning - flexitime - Resource planning - materials management - Approaches to quality management - Quality management system - Quality planning - FMEA method - Quality control - Quality management in procurement - Quality management in production - Continuous improvement process (KVP/Kaizen) - Methods of process and task planning in practice - a simulation game - Creativity and generating ideas - Management - Communication - Motivation - Rules of developing and conducting a presentation - Moderation - Teamwork - Conflict and methods of conflict resolution - Systematic method - Shaping human work system - Workload and work nuisance and their effects - Anthropometry and means of production - Work environment - Cost accounting - Cost accounting and activity based costing - Cost accounting as an instrument of management - Costs by type - Cost centres accounting - Costs drivers accounting based on total costs - Costs drivers accounting based on partial costs - Costs drivers accounting based on process costs - Strategy and planning methods - Rules of coding finished and semi-finished products 	<ul style="list-style-type: none"> - Plan and organize the production process - Plan resources (people, machines, materials) - Plan quality in a production processes - Balance and optimize production capacities - Improve and optimize production processes - Manage subordinate teams - Design optimal work organization and work stations. - Manage production related costs. - Monitor the execution of current production plans - Manage material requirements - Improve and optimize working time - Manage stock material - Control quality in a production process - Analyze the profitability of investments - Optimize and reduce production costs - Organize launching new technologies and machines in a specific production area - Use statistical methods in quality management - Analyze and improve logistics processes - Assist in implementation of information technology in the production area - Manage projects and investments in a production process - Manage maintenance - Manage tools - Manage energy - Budget production - Manage product development - Manage ecology oriented production - Manage safety in production systems - Manage vocational development of employees - Recruit employees and evaluate work 	<ul style="list-style-type: none"> - Teamwork and cooperation with co-workers. - Independently design and organize their own work station as well as that of subordinates. - Organize work station and teams of subordinates. - Supervise other employees' work within a defined group of tasks, including task evaluation and improvement. - Take responsibility for procedures, work results and schedules. - Take actions according to the guidelines concerning ethic and sustainable development - Build trust of internal and external customers - Responsibly control the production process - Independently coordinate interdepartmental plans. - Improve the normative basis in order to plan production. - Monitor and investigate trends and development directions of production organizations. - Independently analyze whether the production process is executed according to plans and coordinate it - Focus and multitasking. - Analytical and synthetic thinking. - Foresee results of their actions. - Influence other co-workers and customers. - Propose solutions if conflicts arise. - Foresee results of actions of others. - Take responsibility for their own actions and actions of their subordinates. - Present their own point of view in the work environment. - Independently make and execute decisions.

<ul style="list-style-type: none"> - Rules of product structuring, specification development and usage list generating - Rules of developing a work plan. - Process planning in terms of flow and delivery times - Process analysis and determining working time standards - Rules of working time measurements - Assessment of the pace of work - Execution and analysis of working time measurement - Measurement of allowance time - Methods of determining recovery time and breaks planning - Teamwork - Multi-station work - Indicators of processes and work systems - Rules of conducting and applying work sampling - Methodology of comparison and estimation (production) - Predefined motion time system (MTM) - Interview technique - Operational data collection (BDE) - Working time standards - Quality control and statistical process control - Control planning - Measuring instruments and their management - Control planning - Methods of profitability accounting - Process management - Controlling in logistics - Descriptive statistics - Correlation and regression - Project planning - Project organization - Project controlling - Planning and management of maintenance tasks - Occupational health and safety - Employment law - Process data management - Working in groups - Flex time systems - Flexible pay systems - Methods of requirements definition - Vocational training of employees - Data and time management. - Design of experiments - Basic project documentation - Developing a project plan - Target costing - Pay policy - Pay differentiation - Strategic planning - Benchmarking - Marketing planning 		<ul style="list-style-type: none"> - Solve critical issues of organizational units in a company. - Solve complex problems that relate to the whole company. - Manage effectively human resources in the production area. - Take risk that requires innovation and stress resistance. - Perform responsible and determined process and project management. - Manage changes. - Independently analyze production costs. - Responsibly control the qualitative and on time production tasks execution - Effectively negotiate, mediate, advise and consult. - Systematically develop of knowledge, skills and competences. - Have high technical culture. - Have impeccable manners. - Introduce and improve quality improving activities in a company - Suggest and propose improvements of production process. - Control the production process according to the quality standards. - Take responsibility for the OSH.
--	--	---

<ul style="list-style-type: none"> - Company organization - Company's annual report - Indicator analysis for a production company - The Balanced Scorecard - Investment accounting - Application of European and national regulations concerning environmental protection - Innovative environmental protection initiatives - Designing and launching training programs - Investment decision making - Standardization - Application of European and national regulations concerning OSH - Developing OSH policy - Ensuring safe working conditions - Risk assessment - Risk reduction on a work place - Assessment of employees - Recruitment and selection of employees - Learning through work - Flexible production plan - Process flow development - Process improvement in terms of resources planning - Energy management, planning, organization, project execution - Teamwork and motivation in energy management - Process improvement in the energy management area - Maintenance management - Total productive maintenance (TPM) - Process improvement in the maintenance management area 		
--	--	--

2.3. Training achievements for the profession *Production Process Organizer* including the EQF/NQF requirements

This part includes training achievements tables (Tables 8, 9, 10, 11) for the profession of a *Production Process Organizer* divided into four partial qualifications that are typical for this profession. The qualifications relate to the EQF/NQF levels 5, 6 and 7 according to the priorities set in Table 5.

The descriptions of training achievements for qualifications of this profession are consistent with the criteria of training achievement levels (learning) contained in the European Qualification Framework. The Table 7 presents a description of levels 5 to 7.

Table 7. Criteria of training achievements in the European Qualification Framework (levels: 5, 6, 7) ¹²

Level	KNOWLEDGE	SKILLS	COMPETENCE
5	Comprehensive, specialized, 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
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 specialized 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
7	Highly specialized 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	Specialized 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 practice and/or for reviewing the strategic performance of teams.

Table 8. Training achievements for the profession of a *Production Process Organizer* typical for K1 qualifications and level 5 of the EQF/NQF.

Level 5 of the EQF/NQF		
Knowledge Has professional knowledge of:	Skills Has professional skills needed to:	Social competences Is able/ready to:
K1 – Production process management		
<ul style="list-style-type: none"> • Work system • Rules of work organizing • Task analysis and evaluation • Block diagrams in process analysis • Processes in a company • Designing and simulation of material flow • Resource planning - production capacity management • Resource planning - flextime • Resource planning - materials management • FMEA method • Continuous improvement process (KVP/Kaizen) • Methods of process and task planning in practice - a simulation game • Creativity and generating ideas 	<ul style="list-style-type: none"> • Plan and organize the production process • Plan resources (people, machines, materials) • Balance and optimize production capacities • Improve and optimize production processes • Manage subordinate teams • Monitor the execution of current production plans • Manage material requirements • Improve and optimize working time • Manage stock material • Analyze the profitability of investments • Optimize and reduce production costs • Organize launching new 	<ul style="list-style-type: none"> • Teamwork and cooperation with co-workers. • Supervise other employees' work within a defined group of tasks, including task evaluation and improvement. • Responsibly control the production process • Improve the normative basis in order to plan production. • Independently analyze whether the production process is executed according to plans and coordinate it • Perform responsible and determined process and project management.

¹² Based on: *European Qualification Framework for Lifelong Learning* (EQF). European Communities 2008.

<ul style="list-style-type: none"> • Management • Communication • Motivation • Rules of developing and conducting a presentation • Moderation • Teamwork • Conflict and methods of conflict resolution • Workload and work nuisance and their effects • Anthropometry and means of production • Work environment • Cost accounting • Cost accounting and activity based costing • Cost accounting as an instrument of management • Costs by type • Cost centres accounting • Costs drivers accounting based on total costs • Costs drivers accounting based on partial costs • Costs drivers accounting based on process costs • Strategy and planning methods • Rules of coding finished and semi-finished products • Rules of product structuring, specification development and usage list generating • Rules of developing a work plan. • Process planning in terms of flow and delivery times • Process analysis and determining working time standards • Rules of working time measurements • Assessment of the pace of work • Execution and analysis of working time measurement • Measurement of allowance time • Methods of determining recovery time and breaks planning • Teamwork • Multi-station work • Indicators of processes and work systems • Rules of conducting and applying work sampling • Methodology of comparison and estimation (production) • Predefined motion time system (MTM) • Interview technique • Operational data collection (BDE) • Working time standards • Methods of profitability accounting • Process management • Controlling in logistics • Project planning 	<p>technologies and machines in a specific production area</p> <ul style="list-style-type: none"> • Analyze and improve logistics processes • Assist in implementation of information technology in the production area • Manage projects and investments in a production process • Manage maintenance • Manage tools • Manage energy • Budget production • Manage product development • Manage ecology oriented production • Manage safety in production systems • Manage vocational development of employees • Recruit employees and evaluate work 	<ul style="list-style-type: none"> • Take responsibility for procedures, work results and schedules. • Systematically develop of knowledge, skills and competences. • Suggest and propose improvements of production process. • Focus and multitasking. • Foresee results of their actions. • Have high technical culture. • Take responsibility for the OSH. • Ensure vocational development of employees.
--	--	---

<ul style="list-style-type: none"> • Project organization • Project controlling • Planning and management of maintenance tasks • Employment law • Process data management • Working in groups • Flex time systems • Methods of requirements definition • Vocational training of employees • Data and time management. • Basic project documentation • Developing a project plan • Target costing • Pay policy • Pay differentiation • Strategic planning • Benchmarking • Marketing planning • Company organization • Company's annual report • Indicator analysis for a production company • The Balanced Scorecard • Investment accounting • Application of European and national regulations concerning environmental protection • Innovative environmental protection initiatives • Designing and launching training programs • Investment decision making • Standardization • Application of European and national regulations concerning OSH • Developing OSH policy • Ensuring safe working conditions • Risk assessment • Risk reduction on a work place • Assessment of employees • Recruitment and selection of employees • Learning through work • Flexible production plan • Process flow development • Process improvement in terms of resources planning • Energy management, planning, organization, project execution • Teamwork and motivation in energy management • Process improvement in the energy management area • Maintenance management • Total productive maintenance (TPM) • Process improvement in the maintenance management area 		
--	--	--

Comment:

The description of the training achievements includes specific for the K1 qualifications and the level 5 of the EQF/NQF correlations with training units and profession related tasks. The mentioned social competences relate only to the level 5 and K1 qualifications.

Table 9. Training achievements for the profession of a *Production Process Organizer* typical for K2 qualifications and level 5 of the EQF/NQF.

Level 5 of the EQF/NQF		
Knowledge Has professional knowledge of:	Skills Has professional skills needed to:	Social competences Is able/ready to:
K2 – Designing work environment		
<ul style="list-style-type: none"> • Work system • Rules of work organizing • Task analysis and evaluation • Block diagrams in process analysis • Processes in a company • Continuous improvement process (KVP/Kaizen) • Methods of process and task planning in practice - a simulation game • Management • Communication • Motivation • Rules of developing and conducting a presentation • Moderation • Teamwork • Conflict and methods of conflict resolution • Systematic method • Shaping human work system • Workload and work nuisance and their effects • Anthropometry and means of production • Work environment • Process planning in terms of flow and delivery times • Operational data collection (BDE) • Process management • Occupational health and safety • Employment law • Process data management • Working in groups • Flex time systems • Methods of requirements definition • Vocational training of employees • Design of experiments • Pay policy • Pay differentiation • Strategic planning • Benchmarking • Marketing planning • Company organization • Company's annual report • Indicator analysis for a production 	<ul style="list-style-type: none"> • Plan and organize the production process • Plan resources (people, machines, materials) • Plan quality in a production processes • Balance and optimize production capacities • Improve and optimize production processes • Manage subordinate teams • Design optimal work organization and work stations. • Manage production related costs. • Monitor the execution of current production plans • Improve and optimize working time • Optimize and reduce production costs • Organize launching new technologies and machines in a specific production area • Analyze and improve logistics processes • Assist in implementation of information technology in the production area • Manage projects and investments in a production process • Manage maintenance • Budget production • Manage product development • Manage safety in production systems • Recruit employees and evaluate work 	<ul style="list-style-type: none"> • Independently plan and organize their own work station. • Take actions according to the guidelines concerning ethic and sustainable development • Build trust of internal and external customers • Have impeccable manners.

company <ul style="list-style-type: none"> • The Balanced Scorecard • Investment accounting • Assessment of employees • Recruitment and selection of employees • Learning through work 		
---	--	--

Comment:

The description of the training achievements includes specific for the K2 qualifications and the level 5 of the EQF/NQF correlations with training units and profession related tasks. The mentioned social competences relate only to the level 5 and K2 qualifications.

Table 10. Training achievements for the profession of a *Production Process Organizer* typical for K3 qualifications and level 6 of the EQF/NQF.

Level 6 of the EQF/NQF		
Knowledge Has professional knowledge of:	Skills Has professional skills needed to:	Social competences Is able/ready to:
K3 – Cost management		
<ul style="list-style-type: none"> • Rules of work organizing • Task analysis and evaluation • Processes in a company • Designing and simulation of material flow • Resource planning - production capacity management • Continuous improvement process (KVP/Kaizen) • Management • Communication • Motivation • Rules of developing and conducting a presentation • Moderation • Teamwork • Conflict and methods of conflict resolution • Cost accounting and activity based costing • Cost accounting as an instrument of management • Costs by type • Cost centres accounting • Costs drivers accounting based on total costs • Costs drivers accounting based on partial costs • Costs drivers accounting based on process costs • Strategy and planning methods • Methods of profitability accounting • Project planning • Project organization • Project controlling • Employment law 	<ul style="list-style-type: none"> • Plan and organize the production process • Plan resources (people, machines, materials) • Plan quality in a production processes • Balance and optimize production capacities • Improve and optimize production processes • Manage subordinate teams • Manage production related costs. • Monitor the execution of current production plans • Analyze the profitability of investments • Optimize and reduce production costs • Organize launching new technologies and machines in a specific production area • Analyze and improve logistics processes • Assist in implementation of information technology in the production area • Manage projects and investments in a production process • Manage maintenance • Budget production • Manage product development 	<ul style="list-style-type: none"> • Organize work station of subordinates. • Solve critical issues of organizational units in a company. • Independently coordinate interdepartmental plans. • Monitor and investigate trends and development directions of production organizations. • Independently analyze production costs. • Analytical and synthetic thinking. • Influence other co-workers and customers. • Propose solutions if conflicts arise. • Foresee results of actions of others. • Present their own point of view in the work environment. • Independently make and execute decisions.

<ul style="list-style-type: none"> • Working in groups • Flexible pay systems • Methods of requirements definition • Vocational training of employees • Data and time management. • Basic project documentation • Developing a project plan • Target costing • Pay policy • Pay differentiation • Strategic planning • Company organization • Company's annual report • Indicator analysis for a production company • Investment accounting 		
--	--	--

Comment:

The description of the training achievements includes specific for the K3 qualifications and the level 6 of the EQF/NQF correlations with training units and profession related tasks. The mentioned social competences relate only to the level 6 and K3 qualifications.

Table 11. Training achievements for the profession of a *Production Process Organizer* typical for K4 qualifications and level 7 of the EQF/NQF.

Level 7 of the EQF/NQF		
Knowledge Has professional knowledge of:	Skills Has professional skills needed to:	Social competences Is able/ready to:
K4 – Quality management in a production process		
<ul style="list-style-type: none"> • Rules of work organizing • Approaches to quality management • Quality management system • Quality planning • FMEA method • Quality control • Quality management in procurement • Quality management in production • Management • Communication • Motivation • Rules of developing and conducting a presentation • Moderation • Teamwork • Conflict and methods of conflict resolution • Cost accounting • Cost accounting and activity based costing • Cost accounting as an instrument of management • Costs by type • Cost centres accounting • Costs drivers accounting based on total costs 	<ul style="list-style-type: none"> • Plan and organize the production process • Plan quality in a production processes • Balance and optimize production capacities • Improve and optimize production processes • Manage subordinate teams • Design optimal work organization and work stations. • Manage production related costs. • Control quality in a production process • Analyze the profitability of investments • Organize launching new technologies and machines in a specific production area • Use statistical methods in quality management • Analyze and improve logistics processes • Manage projects and investments in a production process • Manage maintenance 	<ul style="list-style-type: none"> • Introduce and improve quality improving activities in a company • Responsibly control the qualitative and on time production tasks execution • Solve complex problems that relate to the whole company. • Control the production process according to the quality standards. • Manage effectively human resources in the production area. • Ensure vocational development of employees. • Take a risk that requires innovation and stress resistance. • Manage changes. • Effectively negotiate, mediate, advise and consult.

<ul style="list-style-type: none"> • Costs drivers accounting based on partial costs • Costs drivers accounting based on process costs • Quality control and statistical process control • Control planning • Measuring instruments and their management • Control planning • Descriptive statistics • Correlation and regression • Employment law • Working in groups • Flexible pay systems • Methods of requirements definition • Vocational training of employees • Target costing • Pay policy • Pay differentiation • Application of European and national regulations concerning environmental protection • Innovative environmental protection initiatives • Designing and launching training programs • Investment decision making • Standardization • Application of European and national regulations concerning OSH • Developing OSH policy • Ensuring safe working conditions • Risk assessment • Risk reduction on a work place • Assessment of employees 	<ul style="list-style-type: none"> • Budget production • Manage ecology oriented production • Manage safety in production systems 	
--	--	--

Comment:

The description of the training achievements includes specific for the K4 qualifications and the level 7 of the EQF/NQF correlations with training units and profession related tasks. The mentioned social competences relate only to the level 7 and K4 qualifications.

3. Summary and recommendations

In the European and National Qualification Framework (EQN/NQF) the training (learning) achievements: knowledge, skills and competence are described only generally and inaccurately when perceived from the point of view of enterprises operating in the field of education and training. That is why the Framework functions solely as a reference to creating actual program offers in defined fields by describing the criteria which define particular EQF/NQF levels to a more detailed degree.

In this project this was the case. Four profession related qualifications have been found in the new profession of *Production Process Organizer* and placed on level 5, 6 and 7 of the

European and National Framework. These qualifications have been described by the training achievements typical for this profession. It required the use of the original procedure which made it possible to convert the qualifications into training achievements consistent with corresponding criteria of the EQF/NQF levels.

However, due to the fact that in Poland there are no final systematic solutions concerning the Polish Qualification Framework (PRK - the equivalent of "NQF" used in this text), the basis of defining requirements of training achievements for the profession *Production Process Organizer* in the project formed the criteria described in the European Qualification Framework. Project contractors are aware of the fact that the developed proposal of the training achievements description will have to be adapted to the requirements of the National Qualification Framework in every partner country, including the Polish Qualification Framework. The issues mentioned and started in this project should be continued, including piloting qualification trainings. The continuation should be based on modular training program and include validation and certification processes in context of a European country.

Moreover, a description of the profession *Production Process Organizer* has been created, according to the requirements for such a document, with the intent of applying to the Polish Ministry of Labour and Social Policy for the introduction of a new profession to the International Standard Classification of Occupations for Labour Market. This will cause that the profession and its qualifications will fill the niche on the job and education service market and will meet the demand for specialists in this particular field. On the other hand the modular training program which includes 117 training units will provide a solid foundation to obtain the qualification demanded in the profession of a *Production Process Organizer*.

It constitutes a proposal for universities to perform "short training cycles" based on the training achievements assigned to qualifications that are specific for this profession. The created proposal can also support the training achievements for different groups of studies/study curricula and for a particular study curriculum according to the requirements defined in the National Framework for Higher Education Qualifications (this is a proposal for Poland).