

Erasmus+

Verein Deutscher Ingenieure e.V. (Association of German Engineers) (VDI)

- **Erasmus+**
- **National Agency “Education for Europe” at the Federal Institute for Vocational Education and Training**
- **Cooperation to promote innovation and exchange through exchange of good practices**
- **Strategic partnerships**
- **Strategic Partnerships in Vocational Education and Training**
- **Application round 2015**
- **Application round 1**
- **Grant Agreement Number 2015-1-DE02-KA202-002274**
- **Type of report Final**

- **Date of Submission - Beneficiary Report not yet submitted**

Ralph Appel
Name of legal representative VDI

Collaborating countries:

Germany
Portugal
Slovenia
Croatia
Czech Republic

National coordinators:

Dr. Thomas Kiefer
Prof. Dr. Alfredo Soeiro
Prof. Dr. Karl Gotlih
Prof. Dr. Vjera Krstelj
Ing. Zora Vidovencova

Cooperation to promote innovation and for exchange of good
practices: KA2
KA202 - Strategic Partnerships in Vocational Education and Training

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Main content:

Report Form

Number of attachments:

10

General information

This report form generated from the Mobility Tool+ consists of the following sections:

- **Inactive Organisations within Project Activities**
- **Framework data:** This section summarises some general information about your project.
- **Summary of the project:** This section summarises your project and partnered institutions.
- **Project description:** In this section, you will be asked to provide information about the goals and topics of your project.
- **Project management**
- **Implementation:** This section asks for information about all stages of the project: Implementation of the main activities including practical considerations, participant profile, impact and dissemination of the project results, as well as future plans.
- **Follow-up**
- **Budget:** This section provides a detailed overview of the total EU grant for which you are applying.

To facilitate matters, some parts of this report have been pre-filled with information from Mobility Tool+.

1. Framework data

This section summarises some general information about your project.

Programme	Erasmus+
Key Action	Cooperation to promote innovation and exchange through exchange of good practices
Action	Strategic partnerships
Action	Strategic Partnerships in Vocational Education and Training
Application round	2015
Type of report	Final
Language used to complete the form	EN

1.1. Project identification

Number of the grant agreement	2015-1-DE02-KA202-002274
Project title	Development of a concept for the documentation and validation of non-formal and informal learning outcomes in the engineering profession
Acronym/Abbreviation of the project	NFIF Ing
Project start (DD-MM-YYYY)	01/09/2015
Project end (DD-MM-YYYY)	31/08/2017

Project duration (months)	24
	Verein Deutscher Ingenieure e.V.

1.2. National Agency of the Beneficiary

Identification	National Agency “Education for Europe” at the Federal Institute for Vocational
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Detailed information on the National Agencies for Erasmus+ can be found on the following website:

https://ec.europa.eu/programmes/erasmus-plus/contact_en

2. Summary of the project:

This section summarises your project and partnered institutions.

Please provide a brief summary of the completed project.

Please keep in mind that this section [or parts thereof] may be used by the European Commission, the executive agency or National Agencies in their publications or in providing information about a completed project. A transfer to the Erasmus+ dissemination platform will also be performed (see Annex III of the Program Guide on Dissemination Guidelines). The main aspects to be mentioned are:

- Context / background of the project;
- Objectives;
- Number and profile of the participating institutions;
- Description of the main activities performed;
- Achieved results and impact;
- If relevant, longer-term benefits.

Please answer briefly and precisely.

In 2010, a number of European engineering associations, under the auspices of the European Federation of National Engineering Associations, FEANI, launched the introduction of a European professional card for engineers. Since then, the Engineering Card has increased transparency with regard to engineering qualifications within the European Higher Education Area (EHEA), in that way actively promoting professional mobility. It is therefore an important element in the system of professional recognition established by the EU.

The Engineering Card is subject to an ongoing process of further development. Taking into consideration that the importance of non-formal and informal learning outcomes has steadily increased in recent years, the idea emerged to adapt the Engineering Card to current trends, thereby enhancing its utility for engineers and companies alike in Europe. The key objective was to facilitate acquisition and validation of objectives acquired during the course of non-formal and informal learning by engineers within the system of the Engineering Card.

The Association of German Engineers (VDI) as the largest technical-scientific association in Europe has functioned as coordinator of the project. In addition to the European Federation of National Engineering Associations (FEANI), national engineering associations from Croatia (HIS), Slovenia (ZID) and the Czech Republic (CSVTS) were included as partners. In addition, the University of Porto (U.PORTO) has contributed its expertise as an outstanding research institution in the fields of engineering education and further training. All partners have extensive experience in project work, particularly in engineering and further training.

The main activities during the project runtime can be divided into two main sections: The project's core focus was the multi-stage development of an overall approach to documentation and validation of non-formal and informally acquired learning objectives. This was followed by an implementation phase, which included the technical integration of the plan in the form of a fully functional prototype in the existing VDI database.

The first phase began with a comprehensive and systematic analysis of the actual status at national and international level. During this process, the systems for documentation and validation of competence and learning objectives - technical and non-technical - that already exist were identified. Afterwards an analysis of these systems took place, in order to extract those elements suited to this project based on a best practice approach. These were then adapted to the specific abilities and learning outcomes of engineers so that the final version of the plan contains a documentation and validation system based on proven tools and methods that account for those requirements specific to the engineering environment.

Following the plan's completion, the implementation phase commenced. The first step was to draft a handbook describing the entire process of application and processing in the context of the Engineering Card. This handbook establishes a framework in terms of criteria, process and methodology and is in English. Based on the handbook, a draft of "requirements and procedural principles" was subsequently prepared. These internal documents form a guideline for the employees of branch offices in the individual countries who are responsible for the specific application processing. These guidelines are written in the respective national languages. At the same time that the handbook and guidelines were being developed, the technical implementation of the plan's design took place. The transitioning of the future Engineering Card database from plan to prototype was executed in cooperation with the VDI IT experts, who had also been responsible for the development of the original database. As a result, a platform has been created that includes all new developments in addition to the previous functions. It is possible to transfer data to the existing databases of the partner organisations since they are based on the original VDI database. Throughout the process, coordination with the other FEANI member organisations was particularly important. In addition, the dissemination of information on the project played a significant role within the engineering community. Equally important was obtaining feedback from companies in industry.

Overall, the development of a plan for the documentation and validation of learning objectives by engineers has been successful. This includes integration into the existing database. However, further measures are necessary to raise awareness about the product in the engineering community as well as in business and politics in order for the Engineering Card to become a recognised transparency and mobility aid in the long term.

2.1. Summary of participating institutions

Role of the institution	PIC of the institution	Name of the institution	Country of the institution	Type of the institution	Accreditation of the institution (if applicable)	Project start date	Project end date
Applicant institution	946316869	Verein Deutscher Ingenieure e.V.	Germany	Other		01/09/2015	31/08/2017
Partner institution	932427730	HRVATSKI INZENJERSKI SAVEZ	Croatia	Other		01/09/2015	31/08/2017
Partner institution	999894916	UNIVERSIDADE DO PORTO	Portugal	Other	P PORTO02	01/09/2015	31/08/2017
Partner institution	931645813	Cesky svaz vedeckotechnických společností	Czech Republic	Other		01/09/2015	31/08/2017
Partner institution	932558195	zveza inženjerskih društev maribor, nc_si_feani	Slovenia	Other		01/09/2015	31/08/2017
Partner institution	933303640	FEANI (FEDERATION EUROPEENNE D'ASSOCIATIONS NATIONALES D'INGENIEURS)	Belgium	Other		01/09/2015	31/08/2017

Total number of participating institutions

6

3. Project description:

In this section, you will be asked to provide information about the goals and topics of your project.

Were all of the original project goals achieved? How were they achieved? Please also explain goals that were originally intended, but were not realised in the project.

The main goal was to develop a concept for the documentation and validation of non-formal and informal learning of engineers. The concept was based on an actual state analysis (which systems already exist and can be used given the engineering-specific background of this project?) using a best practice approach (which systems have been implemented and are successful?). Concept coordination and dissemination within FEANI have been successfully realised through the presentation of the project and continuous information on the progress of the project in various bodies at different levels of FEANI (National Members' Forum, European Monitoring Committee, General Assembly, Executive Board). In addition to broadening the information on the concrete project content and objectives within the engineering community in Europe, this has led to a general discussion within FEANI about the further development of the engineering card as a mobility and transparency tool and raised awareness of the topic of "Lifelong Learning" by engineers.

The technical implementation through the integration of the concept into the existing Engineering Card system has also been completed. This step was done by programming a fully functional prototype of the application form for the Engineering Card in Germany. This prototype, which was developed for testing and marketing purposes, can easily be transferred to the live system of the Engineering Card database both in Germany and in the partner countries.

The need to adapt the initial objectives of the project has arisen in several ways. So changes were needed in the type of learning that needs to be recorded. During the development of the project, the goal was defined to create a competency-based documentation and validation system. Within the framework of the research and evaluation phase at the beginning of the project and the subsequent consultations of the partners, it became clear that a compilation of competences without the existence of a reference framework for engineering-specific competences is not feasible and that the initially conceived elaboration of such a reference framework in the course of the project would not be feasible. Due to this fact, the project consortium decided on an alternative approach. If it was not possible to record the competences, then the acquisition of skills, i.e., the process that leads to the existence of competences, could be recorded instead. This was realised through the documentation of learning activities. The system thus offers applicants the opportunity to record the learning activities that can be assigned to a field of competence and thus indirectly demonstrate the existence of a competency.

This adjustment also affected the design of the validation process. Competency validation requires complex assessment procedures that can range from standardised testing procedures, through the delivery of work samples, to expert interviews. Since no competence-based documentation system was developed, the use of these complex validation methods could be dispensed with. Therefore, it was decided to use a document-based validation system. This provides the applicant with the opportunity to record a variety of non-formal and informal learning activities. At the same time, validation by the testing sites is possible without great effort. The combination with a matrix for self-evaluation offers the applicant the opportunity to classify himself or herself in the appropriate competence field and thus to give the addressee of the information (e.g. HR, career counsellor) a starting point for the next steps.

Adjustments were also necessary in the technical implementation phase of the concept. The discussions within FEANI on the further development or transformation of the mobility and transparency instruments initiated by this project - the Engineering Card and EUR ING - are still ongoing. Therefore, based first of all on the Engineering Card database of the VDI as the project coordinator, for the time being the project consortium decided to develop only a fully functional prototype of the application screen and the application process. As a result, costs were saved in this phase, but at the same time a prototype for test and presentation purposes is available, which can, with little effort, be transferred into the live system of the Engineering Card in Germany after the discussions and serve the partners as a blueprint for the customisation of their own databases.

Adjustments were not made to the website of the Engineering Card, as these only make sense with the transfer of the project results into the live system and can then be implemented with little effort.

What results were achieved in the project? Please describe the project results in detail (unless they are listed under “Intellectual Outputs”, “Multiplier Events” or “Educational, Teaching and Learning Activities”). Please also describe results beyond those initially planned (if applicable).

In the project, a concept for a system was developed in several steps, which allows the documentation and validation of non-formal and informal learning activities of engineers within the Engineering Card. This concept includes Intellectual Outputs 02-05. However, these outputs are not each standalone documents, but form a mature overall product that has been steadily expanded to include feedback from various bodies of FEANI, and even more so through ongoing development by the project team.

The concept not only presents and explains the “end product”, namely the system for the documentation and validation of non-formal and informal learning activities of engineers, but was also related to the usability of the project results in follow-up projects or projects that are thematically related, structured in consecutive parts. These include:

- Explanation of the project idea including the importance of lifelong learning for engineers (project background)
- International-level overview of general and specific engineering systems/instruments for capturing learning outcomes (current status)
- Overview of the legal, political and social conditions in the individual project countries and Austria (actual status)
- Presentation of the system for capturing and assessing non-formal and informal learning activities as well as the entire application process (product and explanation)
- Presentation of the difficulties that arose compared to the original project plan (lessons learned)

Beyond the development of the concept, the project team has developed drafts of two basic documents in preparation for the implementation of the project results. The general handbook (IO7), which presents and explains the Engineering Card and the Engineering Card system, lays out the overall framework within which applicants, national engineering organisations (as operators of the engineering card offices) and FEANI (as the overall umbrella organisation) act. The draft of the handbook has been extended by the new functionalities in the area of documentation of further education. The language of the handbook is English, as this is the international working language in the engineering sector.

The requirements and procedural principles (IO8) comprise a work aid for the employees of the national offices entrusted with the processing of applications in day-to-day operations. They are thus an internal working document. The draft is based on a document used by the German office at the VDI. Similarly to the handbook, it had to be extended for the new functionalities. Since this is a working document for the national offices, the requirements and procedural principles were first translated into English and then into the local language of the project countries issuing the Engineering card: German, Croatian, Slovenian and Czech. The English version will serve as the basis for all other national language versions.

In what ways was the project innovative and/or how has it complemented other projects that have already been carried out?

The project was innovative because it took up the current debate on the usability of non-formal and informal learning outcomes in the context of lifelong learning and faster-paced innovation cycles, which are particularly noticeable in engineering, and created an instrument for documenting and validating non-formal learning outcomes.

Thus, the project has increased the already existing options within the Engineering Card for capturing engineers' continuing education activities by a crucial component, the non-formal/informal perspective, and at the same time increased awareness of a hitherto neglected topic in consciousness of the European engineering organisations, which form important transmission belts to the national engineer communities.

What was the most relevant horizontal or sectoral priority dealt with in your project?
(multiple responses possible)

- Contributing to the development of a European area of skills and qualifications

What other relevant horizontal or sectoral priorities have been addressed in your project?
(multiple responses possible)

- Increase the relevance of professional training for the labour market
- Strengthening quality through mobility and cross-border cooperation

If the priorities selected above differ from those indicated in the application, please justify this.

What were the most important topics dealt with in your project? (multiple responses possible)

- Labour market-specific topics including career guidance/youth unemployment
- Recognition (non-formal and informal learning/credits)
- Recognition, transparency, certification

If the topics chosen differ from those specified in the application, please explain the reason.

4. Project management

What activities have you undertaken and which indicators (quantitative and qualitative) have been used to assess whether and to what extent the project objectives and results have been achieved? How did you measure the success?

To measure the project's success, the schedule and budget developed at the beginning of the project, as well as the milestones with their individual work packages, were compared with the final result, the intellectual outputs. The status reports drawn up by the coordinator at trimonthly intervals during the project period based on the feedback from the organisations involved in the project were very helpful in this regard. The comparisons used both formal and content criteria. By comparing the individual intellectual outputs with the goals defined at the beginning of the project, it was possible to verify the degree of achievement of the goals.

How were the quality, effectiveness and efficiency of the project monitored and evaluated (including budget and schedule)? Please indicate which educational staff were involved and how often these activities were conducted.

By developing a fixed schedule and budget with milestones at the beginning of the project, which all partners have accepted, a well-established organisational and planning framework was created within which the members of the project team were to act. Based on these plans, individual work packages were defined for each project phase in terms of content and topic as well as formally (form, scope), which were assigned by the coordinator in consultation with the partners. This definition made the progress of these work packages measurable.

As part of the regular transnational project meetings, the coordinator and the individual project partners reported on the status of the work packages. In addition to the formal progress in terms of time, the content side was always highlighted as well, so that the progress in quantitative and qualitative terms was visible and an adaptation based on the feedback of the overall consortium could be implemented.

Beyond the project meetings, the coordinator was in constant contact with the project partners, as were the project partners among themselves, so that questions about the implementation of the work packages could always be discussed and resolved together quickly and without much effort.

Compliance with the budget plan was monitored by the coordinating body. By capturing all costs incurred within the scope of the project by FI Department of the VDI GmbH, the financial development of the project was visible at all times to the project coordinator (Dr Kiefer) as well as the responsible resource manager (Dr Finck) and the division manager (Mr Funk).

During the joint meetings (at least once a month) the current financial and content status of the project (work packages, milestones) and upcoming project activities for the coming weeks and months were discussed. The feedback from the management staff could be incorporated directly into the daily project work.

Please describe, if applicable, what difficulties have been encountered in project management and implementation and how you and your partners have dealt with them. What measures have been taken to deal with project risks (e.g. conflict resolution processes, etc.)?

The administrative effort in implementing the project was higher than originally expected. In particular, the documentation requirement and the organisation of transnational meetings, which had to take place within a very tight budget and time frame due to the commuting allowances, made for high work effort. However, centralised travel budget management by the coordinator solved this problem.

The staffing of the small partner organisations made project administration a challenge for these organisations and led to regular delays in documenting project meetings and hours worked. However, centralised project documentation by the coordinator using templates created by the coordinator reduced the administrative burden on the partners.

Problems arose at the beginning of the project due to partly unclear statements in the project guide and other official documents, but in the course of the project all questions could be answered by resorting to the National Agency's offers of assistance.

In the run-up to the project, the coordinator developed a risk portfolio that identified project risks and assessed their likelihood of occurrence and potential impact on the project. None of the identified risks occurred. No conflicts among the partners or between partners and the coordinator occurred.

5. Implementation

This section asks for information about all stages of the project: Implementation of the main activities including practical considerations, participant profile, impact and dissemination of the project results, as well as future plans.

Please describe the activities organised in your project and explain the applied methodology. In particular, please provide detailed information on project activities supported by the project management and implementation grant.

The project began with the evaluation of the national and international research status that had already been compiled in advance of the project launch. This was continuously expanded during the course of the project. By dealing with the topics of learning documentation and validation as a whole as well as non-formal and informal learning in particular, the very differing level of knowledge of the project partners at the beginning of the project was compensated for.

In the course of the evaluation and discussion of the project partners, the topic of the project was specified in concrete terms. Terms of central importance have been defined, e.g. non-formal and informal learning, for example, have been identified in the fields of competence specific to the subject and divided into those with technical and non-technical content.

In addition, the national approaches, systems and methods related to non-formal and informal learning were compared and analysed with regard to the relevance of the topic in the respective national context and the usability within the project.

Overall, it was determined in a continuous process of research, evaluation, discussion and exploitation, which scope of service a system for the documentation and validation of non-formal and informal learning should have. Thereafter, the documentation and validation mechanism was selected based on the previously analysed systems. Finally, it was examined which changes to the existing system of the Engineering Card would be necessary to meet the specified criteria. The necessary changes and additions to the database and to the working documents were worked out by the project team and transformed into concrete work packages.

The project management grant was mainly used to cover all costs incurred for project administration within each organisation. The central factors were the documentation of personnel expenses, the planning and documentation of transnational project meetings, including travel planning, as well as communication within the project consortium on questions of project administration.

In addition, the grant from individual partners was used for various promotional activities. For example, the Croatian engineering association HIS and the VDI produced flyers that provided information about the Engineering Card and the project for the documentation and validation of non-formal and informal learning.

The VDI also took the opportunity to present the project in 2016 at a meeting of the Association of European Engineering Students in Gliwice, Poland. The University of Porto and the Slovenian Association of Engineers (ZID), on the other hand, created presentations of the project content and project objectives, which they used in various event formats for advertising. In addition, the coordinator used the grant to attend an information meeting for project coordinators at NABIBB in Bonn in 2016.

How did the project partners contribute to the project? Please refer in detail to the specific competences that the partner organisations have contributed.

All of the partner organisations, apart from the University of Porto, are the institutions in their respective country responsible for issuing the Engineering Card. Through their experience in everyday work with the Engineering Card, they brought with them a wealth of experience relevant to this project for their extension. This was of great relevance in the analysis of the existing system and the definition of the necessary additions. In addition, all partner organisations, in particular the University of Porto, have been intensively involved in engineering education and training for years. In doing so, they have gained experience at the national and international levels in the field of defining engineering competences, competence assessment procedures, the development of learning outcomes and descriptors, and the development of competence frameworks. This was important in categorising and defining learning activities and selecting relevant areas of competence. The years-long work of all partners in the national and international area was of great value for the networking of the project. Thus, information about the topic and the scope of the project could be disseminated within FEANI and the national engineering community, and the project's sphere of influence expanded. In addition, all partner organisations were able to contribute comprehensive project management skills to the different hierarchy levels involved directly or indirectly in the project. This has contributed decisively to a purposeful cooperation in the project consortium and to smooth processes within the individual organisations. Beyond these general competencies, some partners were able to contribute with their specific experiences. The Slovenian Engineering Association (ZID) was able to contribute the competences acquired within the framework of a European joint project in the development of a training system for engineers based on best practice examples. The VDI, as co-founder of the Engineering Card, was able to contribute valuable experience in setting up a documentation and validation system for the project. In addition, the Engineering Card database, on which all national databases in the partner countries are based, was designed and programmed in the VDI so that the technical expertise could be incorporated here in the revision. As a governing body, FEANI was of particular importance as a platform for the dissemination of the project idea and the project goals, and a forum for discussions at pan-European level.

In addition, the FEANI General Secretariat has extensive experience in project management of international projects and thus being able to provide advice to the coordinating body. The Croatian Engineering Federation (HIS) and the Czech Engineering Federation (CSVTS) were able to contribute their extensive experience as developers and organisers of engineering training. This was particularly important in identifying relevant learning activities and developing the classification system for their categorisation and self-evaluation.

The University of Porto took on the role of the advisory scientific institution in the project. With Alfredo Soeiro, it brought an expert for lifelong learning and competence assessment into the project team. At the same time, Alfredo Soeiro fulfilled an interface function with the Portuguese engineering association, which is organising the Engineering Card office in Portugal, and was thus able to be indirectly involved in the project.

In qualitative terms, how do you rate the collaboration and cooperation between the partners and other relevant stakeholders during project implementation? Which positive and negative elements of this cooperation process can you name? What elements would you improve if you were to carry out a similar project in the future?

During the course of the project it turned out that due to different economic and political circumstances in the project countries, different interests are being pursued by the relevant stakeholders.

In Germany, the topic of international mobility of engineers plays a subordinate role, because engineers can remain in Germany due to the excellent labour market situation and there is only a small demand for mobility instruments for the international labour market. As employers consider the value of formal education and training to be very high, and as staff continue to see classic competency assessments as the most important evaluation tool, interest in a transparency tool is likewise easily understandable.

In the Czech Republic, non-formal and informal education plays only a subordinate role in the overall societal debate. Feedback from major automotive companies about the Engineering Card and this project showed that the competence profiles of engineers are very specific and complex, and that the Engineering Card could only make a small contribution, even after a possible expansion in personnel selection.

In Croatia and Slovenia, the engineering associations support the idea of the Engineering Card. In Croatia, it is seen as a means of promoting integration into the European Union. However, the project is viewed with little favour at the political level, since from the point of view of those responsible, it will encourage the exodus of valuable professionals from the domestic economy and thus harm the country.

The European Commission explicitly provides for professional cards such as the Engineering Card in the Professional Recognition Directive, but has for years been supporting the idea of the European Professional Card (EPC), which is a pure information exchange system for public authorities.

Under these circumstances, the implementation of the planned multiplier events proved difficult, as the willingness of the relevant stakeholders to participate was very low. In the future, we would focus on disseminating the project's results at trade fairs and other events where engineers, companies and engineering organisations are increasingly represented to promote the project and its goals, and seek feedback from the outset.

Which target groups were considered in your activities plan? Have the target groups changed compared to those mentioned in the application form?

The main target groups were, in addition to the Europe national engineering associations, which are important transmission belts in the engineering community of their country, national and European policies and companies with a high need for engineers. In the course of the project, engineering students in the form of the European Association of Engineering Students (BEST) were also included in the circle of stakeholders in order to make future engineers more aware of the issue of lifelong learning and continuing education.

5.1. Participation of disadvantaged participants

Were disadvantaged participants involved in project activities?

No

5.2. Transnational project meetings

Please describe the transnational project meetings organised within your project. What was the purpose and frequency of transnational project meetings and who participated? Please explain how these meetings served the purpose of project coordination and implementation. If the results differ from those planned, please explain why.

The transnational project meetings took place at irregular intervals of four to five months, since the original cycle of quarterly meetings did not prove to be useful, and due to modern means of communication it was not necessary. In total, six project meetings were held during the two years of the project. The meeting location rotated. Participants of the meetings were the employees in the respective organisation directly entrusted with the management of the project, so that in addition to questions of form, substantive issues could always be discussed and clarified. In addition, the involvement of the people entrusted with implementation of the project facilitated coordination and planning as no communication loops were required.

The purpose of these meetings was to discuss project administration issues, to discuss substantive issues, and to ensure consensus within the project group on project objectives, burden-sharing and working methods, as well as practices. During the meetings, the coordinator and partners learned about the current state of work package handling and the achievement of milestones (timetable). The expense situation (budget) was discussed, as well issues of travel documentation and other questions of form. The focus of the meetings has always been on discussing substantive issues arising from each partner's handling of the work packages, as well as defining and distributing the upcoming work packages.

5.3. Intellectual outputs

Please describe the intellectual outputs that have been created in your project. Please describe in particular exactly the type of outputs, describe the important contribution in terms of impact and transferability (e.g. new curricula, educational material, IT tools, analyses and studies, etc.). If there are any changes compared to the planned outputs, please explain why.

The “Concept for a System for Documenting and Validating Non-formal and Informal Learning of Engineers” (O5) has been developed in several steps. The collection and evaluation of the state of the research led to an initial sketch of ideas (O2), which in turn was reworked into a basic concept (O3). To this end, the project team defined the topic precisely by formulating the project background and evaluated the state of research with regard to usable methods and instruments for the documentation and validation of learning. This basic concept was presented to the FEANI National Members' Forum, bringing together all national engineering associations. The discussion provided substantive feedback on the need to take account of the national characteristics of each country and the relevant engineering competences. This feedback led to the elaboration of a second draft concept (O4), which extended the concept with an overview of the national characteristics and defined the areas of competence that are of importance to engineers in the non-technical field. It used the European Framework of Reference for Lifelong Learning as well as various other competence frameworks. This concept was discussed in the European Monitoring Committee (EMC) of FEANI, which is responsible, among other things, for the European Engineer and the Engineering Card as FEANI's mobility and transparency products. This body provided valuable feedback on the technical learning activities to be defined. Taking into account this feedback and the evaluated state of the research, the final version of the concept (O5) was prepared.

In addition to an introduction with description of the project and explanation of the background, this includes an international overview of various documentation and validation systems, as well as an overview of the role of non-formal and informal learning in the individual project countries and Austria. This overview illustrates how different the starting point is for introducing a documentation and transparency tool for education and training, including non-formal and informal learning in the individual countries, and what difficulties this entails for an international solution. The core of the concept, the documentation and validation system, will then be explained and the application process for the Engineering Card expanded by the new system will be presented and explained. Finally, the challenges that have arisen in the course of the project are briefly explained (lessons learned) and a glossary is used to define a selection of relevant terms.

The revision of the Engineering Card database (O6) was not implemented as originally planned. Here, a fully functional application form was created that can be used for testing and marketing purposes and can easily be transferred to the existing live system of each national engineering organisation at a later date. The reason for the limitation to a trial version are the unfinished discussions within FEANI about the further development of the Engineering Card and the European Engineer. A transfer to the live system at this time would have resulted in costs that would be lost in the event of a subsequent revision. Therefore, it was decided to await the decision in the FEANI bodies and then to implement the trial version together with any necessary changes. The database can be easily transferred and adapted to national specifics.

The draft of the Engineering Card handbook (O7) defines an overall framework. It explains the idea behind the card as well as the systematics of the application, and has been extended by the new functionalities. The design of the card was not revised as defined in the handbook. The reasons for this are the fundamental considerations for the revision of the card and the merger with the European Engineer. The question of the extent to which a plastic card is still appropriate plays an important role. A revision of the design of the register extract was also not carried out because the new functionalities can be represented in the existing system. The handbook is available in English and can therefore be used universally.

The draft requirements and procedural principles (O8) are based on a document of the German office of the Engineering Card. It breaks down the general and comprehensive information in the handbook and is therefore an aid to the employees of the national offices entrusted with processing applications in everyday operations. The document is available in English, among others, and can easily be translated into national languages, as is the case with this project.

No. of the intellectual output	O2
Description of the intellectual output	Conceptual sketch for documentation and validation of non-formal and informal learning outcomes
Description of the intellectual output	The rough draft developed from the analysis of the Basic Document (O1) as a working basis for the substantive work
Start date (DD-MM-YYYY)	01/09/2015
End date (DD-MM-YYYY)	31/03/2016
Languages available for	English
Available media	Text file
Lead organisation	Verein Deutscher Ingenieure e.V.
Participating institutions	zveza inzenirskih drustev maribor, nc_si_feani, FEANI (FEDERATION EUROPEENNE D'ASSOCIATIONS NATIONALES D'INGENIEURS), Cesky svaz vedeckotechnickych spolecnosti, HRVATSKI INZENJERSKI SAVEZ, UNIVERSIDADE DO PORTO

No. of the intellectual output	O3
Description of the intellectual output	Draft concept for documentation and validation of non-formal and informal learning outcomes for presentation and discussion in FEANI-EMC
Description of the intellectual output	The draft concept arising from the continuous development of the concept outline for presentation to the FEANI European Monitoring Committee (EMC).
Start date (DD-MM-YYYY)	01/04/2016
End date (DD-MM-YYYY)	30/06/2016
Languages available for selection	English

Available media	Text file
Lead organisation	Verein Deutscher Ingenieure e.V.
Participating institutions	zveza inzenirskih drustev maribor, nc_si_feani, FEANI (FEDERATION EUROPEENNE D'ASSOCIATIONS NATIONALES D'INGENIEURS), UNIVERSIDADE DO PORTO, HRVATSKI INZENJERSKI SAVEZ, Cesky svaz vedeckotechnickych spolecnosti

No. of the intellectual	O4
Description of the intellectual output	Draft concept for documentation and validation of non-formal and informal learning outcomes for presentation to all FEANI members
Description of the intellectual output	Final draft of a concept developed on the basis of the adaptation proposals and change requests of FEANI-EMC, which will be presented to all FEANI member associations. In the following discussion, all member associations will once again be given the opportunity to make comments and submit proposals for extension and amendments.
Start date (DD-MM-YYYY)	01/07/2016
End date (DD-MM-YYYY)	14/10/2016
Languages available for selection	English
Available media	Text file
Lead organisation	Verein Deutscher Ingenieure e.V.
Participating institutions	HRVATSKI INZENJERSKI SAVEZ, FEANI (FEDERATION EUROPEENNE D'ASSOCIATIONS NATIONALES D'INGENIEURS), Cesky svaz vedeckotechnickych spolecnosti, UNIVERSIDADE DO PORTO, zveza inzenirskih drustev maribor, nc_si_feani

No. of the intellectual output	O5
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Description of the intellectual output	Final version of the concept for documentation and validation of non-formal and informal learning outcomes within the framework of the Engineering Card
Description of the intellectual output	Final version of the concept developed after coordination with all FEANI member associations and incorporation of the amendment and supplement proposals. This forms the basis for the implementation phase.
Start date (DD-MM-YYYY)	15/10/2016
End date (DD-MM-YYYY)	31/03/2017
Languages available for selection	English
Available media	Data record, text file
Lead organisation	Verein Deutscher Ingenieure e.V.
Participating institutions	HRVATSKI INZENJERSKI SAVEZ, zveza inženirskih drustev maribor, nc_si_feani, FEANI (FEDERATION EUROPEENNE D'ASSOCIATIONS NATIONALES D'INGENIEURS), UNIVERSIDADE DO PORTO, Cesky svaz vedeckotechnických spolecnosti
No. of the intellectual output	O6
Description of the intellectual output	Engineering Card databases
Description of the intellectual output	Adaptation of the Engineering Card databases by the individual project partners: Incorporation of the final concept for documentation and validation of non-formal and informal learning outcomes. The database contents are in the local language and, if necessary, in English.
Start date (DD-MM-YYYY)	01/01/2017
End date (DD-MM-YYYY)	31/07/2017

Languages available for selection	German
Available media	Database
Lead organisation	Verein Deutscher Ingenieure e.V.
Participating institutions	zveza inzenirskih drustev maribor, nc_si_feani, UNIVERSIDADE DO PORTO, Cesky svaz vedeckotechnickych spolecnosti, HRVATSKI INZENJERSKI SAVEZ
No. of the intellectual output	07
Description of the intellectual output	FEANI Handbook on Managing the Engineering Card
Description of the intellectual output	Extension of the general handbook for the Engineering Card issued by FEANI and made available to the member associations. It defines the general framework of the Engineering Card system in the areas of recognition of engineering education, work experience and training. The handbook is written in English.
Start date (DD-MM-YYYY)	01/04/2017
End date (DD-MM-YYYY)	31/07/2017
Languages available for selection	English
Available media	Text file, brochures in paper form
Lead Organisation	FEANI (FEDERATION EUROPEENNE D'ASSOCIATIONS NATIONALES D'INGENIEURS)
Participating institutions	Verein Deutscher Ingenieure e.V., UNIVERSIDADE DO PORTO, HRVATSKI INZENJERSKI SAVEZ, Cesky svaz vedeckotechnickych spolecnosti, zveza inzenirskih drustev maribor, nc_si_feani

No. of the intellectual	O8
Description of the intellectual output	Requirements and procedural principles of the Engineering Card
Description of the intellectual output	Revision of the companion handbooks used in the day-to-day work by the Engineering Card offices responsible for the initial review and processing of applications, customer information, and card printing and mailing in the respective countries, as well as by the registries responsible for examining degree programs and continuing education.
Start date (DD-MM-YYYY)	01/04/2017
End date (DD-MM-YYYY)	31/07/2017
Languages available for selection	Slovenian, Czech, German
Available media	Text file, brochures in paper form
Lead organisation	Verein Deutscher Ingenieure e.V.
Participating institutions	FEANI (FEDERATION EUROPEENNE D'ASSOCIATIONS NATIONALES D'INGENIEURS), zveza inženirskih drustev maribor, nc_si_feani, Cesky svaz vedeckotechnických spolecnosti, HRVATSKI INZENJERSKI SAVEZ, UNIVERSIDADE DO PORTO

5.4. Multiplier events

Please describe the multiplier events in your project and how they have contributed to the exchange and dissemination of intellectual outputs. If there is a difference between planning and implementation, please explain the reasons.

Previously in this report, the different interests were explained, within which the project partners tried to implement the originally planned multiplier events. The organisation of the originally planned events has therefore been adjusted. The project team decided that individual partners should conduct multiplier events in their national environment involving all stakeholders who expressed interest in the project and its results, or who had previously been in contact with the project.

The Croatian Engineering Association HIS organised an event (E1) in May 2017 addressing a wide audience of educational institutions, politics, administration, scientific institutions and engineering practice. The event focused on disseminating the results from preparation of the final concept (O5), whereby the general issues of non-formal and informal learning, lifelong learning and documentation and validation of learning processes, as well as the concrete approach to this project, were made accessible to a wide spectrum of stakeholders.

The University of Porto organised an event (E2) in August 2017, aimed at international students organised in the European Network of Engineering Students (BEST). This provided the opportunity to disseminate the project outcomes (O5) within a group of stakeholders for whom mobility plays an important role, as their age cohort often has to be above-averagely mobile to meet the challenges of the European labour market. The topics of recognition of study programs and comparability of education play an equally important role for this group as the increasing importance of non-formal and informal learning. BEST's networking at the European level guarantees wide dissemination of information and continued access to the BEST network in order to be able to use it continuously as a dissemination platform.

Parallel to the University of Porto, an event of the Portuguese Association of Engineers was held. This event was not funded by project funds and was aimed at the engineering community. Participants were mainly instructors in engineering education and freelance engineers. The event helped raise awareness of non-formal and informal learning and the Engineering Card approach to documentation and validation.

The Slovenian Engineering Association (ZID) organised an information event in Maribor in September 2017. Since this took place at the end of the project, no funds were withdrawn from the project. The target group of the event were lecturers at universities, representatives of engineering organisations as well as persons from engineering practice (business).

Since the originally planned involvement of business and politics was difficult in most countries, the multiplier events focused on the dissemination of project results within engineering organisations, scientific institutions and engineering practice. This will indirectly create pressure on politics and the economy to deal with project results and overarching issues. In addition, the events have contributed to a broader social perception of the topic.

Event no.	E1
Name of the event	ME NFIF Zagreb

Description of the multiplier event	<p>Contrary to the original planning, the number of participants admitted to the event was significantly increased. The aim was to inform as many relevant groups as possible from science, politics and business about the project and its results. In Croatia, this adjustment is due, among other things, to the fact that there is some scepticism about a competence-based system that could facilitate emigration to other EU countries for an important group of professionals. Addressing these concerns was a key aspect of ME.</p>
Country of the event venue	<p>Croatia</p>
Start date (DD-MM-YYYY)	<p>17/05/2017</p>
End date (DD-MM-YYYY)	<p>17/05/2017</p>
Concerns the following intellectual outputs (please indicate the ID number of the intellectual output)	<p>O5</p>
Lead organisation	<p>HRVATSKI INZENJERSKI SAVEZ</p>
Participating institutions	
Event no.	<p>E2</p>
Name of the event	<p>ME NFIF Porto</p>
Description of the multiplier event	<p>The event in Porto was aimed at two target groups. An event organised by the University of Porto was explicitly aimed at engineering students who have a strong interest in international mobility and are important stakeholders as engineers of the future.</p>

	At the same time, there was an event (not financed by the project budget) of the Ordem dos Engenheiros, which considered the Engineering Card and the results of the project from the perspective of the organisation responsible for issuing the card. Portugal only began issuing the Engineering Card in 2016.
Country of the event venue	Portugal
Start date (DD-MM-YYYY)	28/07/2017
End date (DD-MM-YYYY)	28/07/2017
Concerns the following intellectual outputs (please indicate the ID number of the intellectual output)	O5
Lead organisation	UNIVERSIDADE DO PORTO
Participating institutions	

5.5. Educational, teaching and learning activities

This section does not apply to this project.

6. Follow-up

6.1. Impact

What impact did the project have on the people and institutions involved?

The project has raised awareness both among the people involved and within the participating institutions of the need to consider current engineering education and training issues for the further development of existing or new instruments. In addition, the project has made it clear that synergies can be harnessed through international cooperation. In addition, it has been shown that recourse to funding can overcome hurdles, especially in the cooperation of organisations with different staffing and financial starting points, in order to tackle important projects. After consultation with all project partners, there is great interest from all sides to carry out future follow-up projects or other projects on other topics in the same or expanded composition.

Which target groups and other relevant stakeholders does the project have outside the participating institutions? What impact did the project have on you and how did you hear about the results?

In addition to the participating institutions, the project was aimed at all national engineering associations in Europe, representing 34 countries of the European Higher Education Area. Through the FEANI bodies, these organisations were familiarised with the project or the interim results available at the time. The project triggered discussion within FEANI on the Engineering Card, which in the medium term should at least lead to further development of the existing system in the existing Engineering Card countries and possibly in the long term to merge with the system of the European Engineer and extend it to all FEANI Members.

The impact of the project on companies did not meet initial expectations, as no company that was contacted confirmed that non-formal and informal learning will play a central role in the education of engineers in the future. In addition, all those interviewed in the companies felt that the formal education and training system (certificates, credentials, evidence) would, in the foreseeable future, provide all the necessary information needed by HR department staff to assess national and international applicants.

The impact on policy is not yet assessable, as the discussions with the relevant Directorate-General on how to implement the Directive on Recognition of Professional Qualifications are still ongoing. The project outcomes provide a good basis for the project team to illustrate the benefits of sectoral solutions to the Commission, while at the same time moving them towards steps to improve the framework for such solutions (keyword: European Reference Framework for Competencies). The impact on the engineers as addressees of the Engineering Card and the innovations developed in this project cannot be assessed yet, as the extent to which the possibility for the documentation and validation of non-formal and informal learning is accepted will only become clear on adoption into the live system. However, the experience of discussions with students and early-career professionals in the run-up to the project and during the project has shown that there is a demand for a means to comprehensively document and validate formal, non-formal and informal learning activities. The project has helped raise awareness that this type of learning plays an important role in individual professional development, and therefore documentation and validation thereof are important for self-expression.

What contribution has the project made to achieving the most relevant priorities according to the project description? To what extent was the expected impact achieved?

The project contributed to the topic of “labour market issues” by approaching the issue of “Mobility and Transparency in the Labour Market” from a pan-European perspective and offering an approach to solving the challenges faced by engineers in the European labour market. The project has achieved a high degree of efficacy within the community of national European engineering associations because it has fuelled the discussion on the further development of existing mobility and transparency instruments. In order to be fully effective, the project, and moreover the overarching issues, need to be better known in FEANI and in European politics in order to generate more and long-term support. This is the task of a long-term marketing strategy that promotes not only the individual project results, but also the entire solution approach of the engineering card. The project has made an important contribution in the field of “recognition of non-formal/informal learning”. On the one hand, it has raised awareness of the topic within a multinational organisation (FEANI) and its individual member associations and has triggered a discussion of the topic. On the other hand, it has developed a concrete instrument with which the recognition of non-formal and informal learning by engineers can be realised. Thus, the project can serve as a blueprint for other projects with the same or a similar topic and develop their impact beyond their own stakeholders.

What impact has the project achieved at local, regional, European and/or international level? Please provide qualitative and quantitative indicators.

The project has taken up a general trend in continuing education. The Engineering Card is an instrument that facilitates the documentation and validation of training and continuing education content, thereby increasing transparency in the labour market. The card complements the Bologna Process at European level. The addition of new functionalities, including a general trend in continuing education, namely the increasing importance of non-formal and informal learning, represents a further development that supports the objective of promoting mobility.

At national/regional level, the project can raise awareness in the long term that documentation and recognition tools are beneficial for individual professional development, because they help people to get an overview of their own competencies and, where applicable, competency gaps, and at the same time provide the opportunity to present their own competency portfolio to the outside world.

The indicator of this impact is the number of new applications after the introduction of the new functionalities into the existing databases. Since these are not yet fully implemented, the effect cannot yet be measured in quantitative terms. In addition, the application processing should record the number of applications in which the new functionalities were used. A survey among the applicants can also provide information here.

6.2. Dissemination and use of the project results

What were the target groups of your dissemination activities, both inside and outside your partnership? In particular, please describe your target group(s) at the local/regional/national/EU/international level and explain your selection.

The first target group of the dissemination activities were the national engineering associations and umbrella organisations and their affiliated institutions and organisations. These were an important target group as natural information multipliers and transmission belts in the engineering community, as well as business and politics at the national level. In addition, these existing networks could be used with little effort.

The second target group was formed by companies in the individual project countries, as these are important for the functioning of the Engineering Card insofar as they use the information from the card and registry extract to increase acceptance of the Engineering Card. In addition, the aim of the card is to help companies to find suitable candidates.

Therefore, it was crucial to involve companies.

Politicians at the national and European level were the third target group, as they can increase the visibility and acceptance of the Engineering Card by promoting it. Students and engineering graduates were the fourth target group because they represent the potential applicants of the future, and the issues of mobility in the labour market and transparency of engineering education and training will affect them directly on the path to the labour market.

What dissemination activities have been performed in your partnership and which channels have you used? Please also explain the feedback you have received.

Dissemination of project information and inter-project results within engineering organisations took place directly through the various FEANI bodies and bilateral contacts. In addition, the websites of VDI and FEANI were used to draw attention to the project. The feedback here took the form of suggestions for improvement and was taken into account in the elaboration of the individual concept stages (O2-O5). In the context of presentations and lectures on FEANI in general and the Engineering Card in particular, e.g. at trade fairs or events organised by partner organisations, attention was drawn to the ongoing project. There was little feedback on this topic, as the topic was not a relevant issue for many participants. Activities to disseminate the project goals and results among the companies in the first stage included targeted discussions with known contacts, and in the second stage with employees of the HR departments. Here the feedback was sceptical about the value and usability of a documentation and validation system such as the Engineering Card in the process of selecting applicants for engineering positions. Although the role of non-formal and informal learning has been acknowledged, in many cases the central role of formal evidence on education (certificates) and professional development (work certificates) has been emphasised.

The materials created in the context of Erasmus+ projects should be freely available. If your project has produced intellectual outputs or other results, please describe if and how you have made them freely available to the public (directly via the internet or in digital form over the internet). If there is a restriction on the use of the free licence, please indicate the reasons for this as well as the extent and nature of the restriction.

All intellectual outputs have an open licence and can be used freely. They are openly accessible through the dissemination platform of the European Commission. In addition, all Intellectual Outputs are accessible via the VDI Collaboration Platform.

How did you ensure that the project results were available and/or used by others?

The project results will be made freely available through the European Commission dissemination platform. The results are all available in electronic form so that they can be used over the long term and shared with little effort. FEANI and all project partners will make the project results available on their websites. In cases in which the project results cannot be used directly without further background information (e.g. source code of the Engineering Card database), the coordinating institution will, upon request, help interested parties at any time to make the results usable.

How do you estimate the potential to use this project approach in other projects in a larger scale and/or in a different area or field of endeavour?

This potential is very highly valued by the project team, as many other aspects have emerged during the project, which would have to be worked on as separate projects with a different composition of the project consortium. The project also has the potential to be pursued further in a follow-up project, as the development of the Engineering Card will be a long-term process in which this project was an important first step.

6.3. Sustainability

What activities and results will be sustained after the end of EU financial support? How will these activities be carried out and financed?

The discussions within FEANI for the further development of the Engineering Card continue. In addition, in 2016, Portugal began issuing the card. Mobility and transparency in the European labour market are central to FEANI. The Engineering Card and the European Engineer are the key tools of FEANI in achieving its goal of continuously increasing the permeability of the labour market for engineers in Europe and supporting the Bologna Process. FEANI therefore has an immense interest in continuously developing the Engineering Card, taking current trends into account. With an increasing number of countries in which the Engineering Card is available, its importance and acceptance will grow.

FEANI will continue to promote its bodies and networks in the coming years and use its influence to publicise the Engineering Card and find support in politics and business. After evaluation of the overall project by the VDI, further steps will be decided together with all project partners. The possibility of a follow-up project was generally rated positively by all project partners in advance.

FEANI will announce and discuss the project results within its bodies. Regardless of whether the Engineering Card changes in shape and scope, it will essentially remain in its present form and encompass the results of this project.

The marketing measures for promotion of the Engineering Card (presentations and lectures, appearances at trade fairs, vouchers, etc.) will be maintained and financed by the individual organisations responsible for publication of the Engineering Card at the current level. FEANI will also continue and finance its advertising activities at the current level.

This section provides a detailed overview of the total EU grant for which you are applying.

7.1. Budget overview

PIC of the institution	Project management and implementation	Transnational project meetings	Intellectual Outputs	Educational, teaching and learning activities				Grant for participants with disabilities	Exceptional costs	Exceptional costs - bank guarantee	Total (calculated)
				Multiplier events	EU travel expense allowance	EU subsistence expense	Grant for language support				
946316869	12,000.00	2,875.00	76,184.00	0.00	0.00	0.00	0.00	0.00	16,275.00	0.00	107,334.00
931645813	6,000.00	2,485.00	3,237.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11,722.00
932427730	6,000.00	2,485.00	1,702.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	14,187.00
932558195	6,000.00	2,485.00	3,288.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11,773.00
933303640	6,000.00	2,875.00	4,494.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13,369.00
999894916	6,000.00	3,615.00	10,549.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	22,464.00
Total	42,000.00	16,820.00	99,454.00	6,300.00	0.00	0.00	0.00	0.00	16,275.00	0.00	180,849.00

7.1.1. Total amount of the project

Declared total project amount (calculated)	180,849.00
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Explanation of the above total amount (if necessary).

less TPM necessary; less ME; IT costs for prototype are less
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7.2. Project management and implementation

PIC of the institution	Role of the institution	Name of the institution	Total
932558195	Partner	zveza inženirskih drustev maribor, nc_si_feani	6,000.00
999894916	Partner	UNIVERSIDADE DO PORTO	6,000.00
932427730	Partner	HRVATSKI INZENJERSKI SAVEZ	6,000.00
946316869	Grant beneficiary	Verein Deutscher Ingenieure e.V.	12,000.00
931645813	Partner	Cesky svaz vedeckotechnických spolecnosti	6,000.00
933303640	Partner	FEANI (FEDERATION EUROPEENNE D'ASSOCIATIONS NATIONALES D'INGENIEURS)	6,000.00
Total			42,000.00

7.3. Transnational project meetings

PIC of the sending institution	Total number of meetings	Total number of participants at all meetings	Distance category	Grant per participant	Total (calculated)
931645813	1	2	0 - 99 km	0.00	0.00
931645813	1	1	0 - 99 km	0.00	0.00
931645813	1	1	100 - 1,999 km	575.00	575.00
931645813	1	1	>= 2,000 km	760.00	760.00
931645813	1	1	100 - 1,999 km	575.00	575.00
931645813	1	1	100 - 1,999 km	575.00	575.00
932427730	1	1	100 - 1,999 km	575.00	575.00

Cooperation to promote innovation and exchange through exchange of good practices: KA2
KA202 - Strategic Partnerships in Vocational Education and Training

932427730	1	1	100 - 1,999 km	575.00	575.00
932427730	1	1	0 - 99 km	0.00	0.00
932427730	1	1	>= 2,000 km	760.00	760.00
932427730	1	1	100 - 1,999 km	575.00	575.00
932427730	1	1	0 - 99 km	0.00	0.00
932558195	1	1	100 - 1,999 km	575.00	575.00
932558195	1	1	100 - 1,999 km	575.00	575.00
932558195	1	1	0 - 99 km	0.00	0.00
932558195	1	1	>= 2,000 km	760.00	760.00
932558195	1	1	100 - 1,999 km	575.00	575.00
933303640	1	1	100 - 1,999 km	575.00	575.00
933303640	1	1	100 - 1,999 km	575.00	575.00
933303640	1	1	100 - 1,999 km	575.00	575.00
933303640	1	2	100 - 1,999 km	575.00	1,150.00
946316869	1	1	100 - 1,999 km	575.00	575.00
946316869	1	1	100 - 1,999 km	575.00	575.00
946316869	1	1	100 - 1,999 km	575.00	575.00

Cooperation to promote innovation and exchange through exchange of good practices: KA2
KA202 - Strategic Partnerships in Vocational Education and Training

946316869	1	1	100 - 1,999 km	575.00	575.00
946316869	1	2	0 - 99 km	0.00	0.00
946316869	1	1	0 - 99 km	0.00	0.00
946316869	1	1	100 - 1,999 km	575.00	575.00
999894916	1	1	>= 2,000 km	760.00	760.00
999894916	1	1	>= 2,000 km	760.00	760.00
999894916	1	1	>= 2,000 km	760.00	760.00
999894916	1	1	0 - 99 km	0.00	0.00
999894916	1	1	100 - 1,999 km	575.00	575.00
999894916	1	1	>= 2,000 km	760.00	760.00
Total					16,820.00

7.4. Intellectual outputs

PIC of the institution	No. of the intellectual output	Personnel category	Country of the institution	Number of working days	Grant per day	Total (calculated)
932558195	O2	Managers	Slovenia	0	164.00	0.00
		Teachers/trainers/researchers/youth workers		11	137.00	1,507.00
		Skilled workers		0	102.00	0.00

		Administrative staff		0	78.00	0.00
946316869	O2	Managers	Germany	0	280.00	0.00
		Teachers/trainers/researchers/youth workers		94	214.00	20,116.00
		Skilled workers		0	162.00	0.00
		Administrative staff		0	131.00	0.00
932558195	O3	Managers	Slovenia	0	0.00	0.00
		Teachers/trainers/researchers/youth workers		0	137.00	0.00
		Skilled workers		0	0.00	0.00
		Administrative staff		0	0.00	0.00
933303640	O3	Managers	Belgium	0	280.00	0.00
		Teachers/trainers/researchers/youth workers		2	214.00	428.00
		Skilled workers		0	162.00	0.00
		Administrative staff		0	131.00	0.00
999894916	O3	Managers	Portugal	0	164.00	0.00
		Teachers/trainers/researchers/youth workers		6	137.00	822.00
		Skilled workers		0	102.00	0.00
		Administrative staff		0	78.00	0.00

932427730	O4	Managers	Croatia	0	88.00	0.00
		Teachers/trainers/researchers/youth workers		8	74.00	592.00
		Skilled workers		0	55.00	0.00
		Administrative staff		0	39.00	0.00
933303640	O4	Managers	Belgium	0	280.00	0.00
		Teachers/trainers/researchers/youth workers		2	214.00	428.00
		Skilled workers		0	162.00	0.00
		Administrative staff		0	131.00	0.00
932427730	O5	Managers	Croatia	0	88.00	0.00
		Teachers/trainers/researchers/youth workers		1	74.00	74.00
		Skilled workers		0	55.00	0.00
		Administrative staff		0	39.00	0.00
932558195	O5	Managers	Slovenia	0	0.00	0.00
		Teachers/trainers/researchers/youth workers		0	137.00	0.00
		Skilled workers		0	0.00	0.00
		Administrative staff		0	0.00	0.00
		Managers		0	280.00	0.00

933303640	O5	Teachers/trainers/researchers/youth workers	Belgium	2	214.00	428.00
		Skilled workers		0	162.00	0.00
		Administrative staff		0	131.00	0.00
946316869	O6	Managers	Germany	0	280.00	0.00
		Teachers/trainers/researchers/youth workers		34	214.00	7,276.00
		Skilled workers		0	162.00	0.00
		Administrative staff		0	131.00	0.00
933303640	O2	Managers	Belgium	0	280.00	0.00
		Teachers/trainers/researchers/youth workers		3	214.00	642.00
		Skilled workers		0	162.00	0.00
		Administrative staff		0	131.00	0.00
931645813	O4	Managers	Czech Republic	0	164.00	0.00
		Teachers/trainers/researchers/youth workers		1	137.00	137.00
		Skilled workers		2	102.00	204.00
		Administrative staff		1	78.00	78.00
999894916	O4	Managers	Portugal		164.00	0.00
		Teachers/trainers/researchers/youth workers		25	137.00	3,425.00

		Skilled workers		0	102.00	0.00
		Administrative staff		0	78.00	0.00
932558195	O6	Managers	Slovenia	0	164.00	0.00
		Teachers/trainers/researchers/youth workers		3	137.00	411.00
		Skilled workers		0	102.00	0.00
		Administrative staff		0	78.00	0.00
933303640	O8	Managers	Belgium	0	280.00	0.00
		Teachers/trainers/researchers/youth workers		4	214.00	856.00
		Skilled workers		0	162.00	0.00
		Administrative staff		0	131.00	0.00
931645813	O2	Managers	Czech Republic	0	164.00	0.00
		Teachers/trainers/researchers/youth workers		10	137.00	1,370.00
		Skilled workers		0	102.00	0.00
		Administrative staff		1	78.00	78.00
932558195	O4	Managers	Slovenia	0	0.00	0.00
		Teachers/trainers/researchers/youth workers		0	137.00	0.00
		Skilled workers		0	0.00	0.00

		Administrative staff		0	0.00	0.00
999894916	O5	Managers	Portugal	0	164.00	0.00
		Teachers/trainers/researchers/youth workers		7	137.00	959.00
		Skilled workers		0	102.00	0.00
		Administrative staff		0	78.00	0.00
946316869	O7	Managers	Germany	0	280.00	0.00
		Teachers/trainers/researchers/youth workers		24	214.00	5,136.00
		Skilled workers		0	162.00	0.00
		Administrative staff		0	131.00	0.00
999894916	O7	Managers	Portugal	0	164.00	0.00
		Teachers/trainers/researchers/youth workers		15	137.00	2,055.00
		Skilled workers		0	102.00	0.00
		Administrative staff		0	78.00	0.00
932558195	O8	Managers	Slovenia	0	164.00	0.00
		Teachers/trainers/researchers/youth workers		5	137.00	685.00
		Skilled workers		0	102.00	0.00
		Administrative staff		0	78.00	0.00

946316869	O4	Managers	Germany	0	280.00	0.00
		Teachers/trainers/researchers/youth workers		74	214.00	15,836.00
		Skilled workers		0	162.00	0.00
		Administrative staff		0	131.00	0.00
931645813	O5	Managers	Czech Republic	0	0.00	0.00
		Teachers/trainers/researchers/youth workers		0	137.00	0.00
		Skilled workers		0	0.00	0.00
		Administrative staff		0	0.00	0.00
999894916	O6	Managers	Portugal	0	164.00	0.00
		Teachers/trainers/researchers/youth workers		9	137.00	1,233.00
		Skilled workers		0	102.00	0.00
		Administrative staff		0	78.00	0.00
932427730	O7	Managers	Croatia	0	88.00	0.00
		Teachers/trainers/researchers/youth workers		3	74.00	222.00
		Skilled workers		0	55.00	0.00
		Administrative staff		0	39.00	0.00
		Managers		0	88.00	0.00

932427730	O2	Teachers/trainers/researchers/youth workers	Croatia	3	74.00	222.00
		Skilled workers		0	55.00	0.00
		Administrative staff		0	39.00	0.00
932427730	O3	Managers	Croatia	0	88.00	0.00
		Teachers/trainers/researchers/youth workers		2	74.00	148.00
		Skilled workers		0	55.00	0.00
		Administrative staff		0	39.00	0.00
946316869	O3	Managers	Germany	0	280.00	0.00
		Teachers/trainers/researchers/youth workers		38	214.00	8,132.00
		Skilled workers		0	162.00	0.00
		Administrative staff		0	131.00	0.00
946316869	O5	Managers	Germany	0	280.00	0.00
		Teachers/trainers/researchers/youth workers		68	214.00	14,552.00
		Skilled workers		0	162.00	0.00
		Administrative staff		0	131.00	0.00
931645813	O6	Managers	Czech	0	164.00	0.00
		Teachers/trainers/researchers/youth workers		2	137.00	274.00

		Skilled workers	Republic	0	102.00	0.00
		Administrative staff		0	78.00	0.00
932427730	O6	Managers	Croatia	0	88.00	0.00
		Teachers/trainers/researchers/youth workers		2	74.00	148.00
		Skilled workers		0	55.00	0.00
		Administrative staff		0	39.00	0.00
931645813	O7	Managers	Czech Republic	0	164.00	0.00
		Teachers/trainers/researchers/youth workers		2	137.00	274.00
		Skilled workers		0	102.00	0.00
		Administrative staff		0	78.00	0.00
931645813	O8	Managers	Czech Republic	0	164.00	0.00
		Teachers/trainers/researchers/youth workers		3	137.00	411.00
		Skilled workers		0	102.00	0.00
		Administrative staff		0	78.00	0.00
932427730	O8	Managers	Croatia	0	88.00	0.00
		Teachers/trainers/researchers/youth workers		4	74.00	296.00
		Skilled workers		0	55.00	0.00

Cooperation to promote innovation and exchange through exchange of good practices: KA2
KA202 - Strategic Partnerships in Vocational Education and Training

		Administrative staff		0	39.00	0.00
999894916	O2	Managers	Portugal	0	164.00	0.00
		Teachers/trainers/researchers/youth workers		6	137.00	822.00
		Skilled workers		0	102.00	0.00
		Administrative staff		0	78.00	0.00
933303640	O7	Managers	Belgium	0	280.00	0.00
		Teachers/trainers/researchers/youth workers		8	214.00	1,712.00
		Skilled workers		0	162.00	0.00
		Administrative staff		0	131.00	0.00
931645813	O3	Managers	Czech Republic	0	164.00	0.00
		Teachers/trainers/researchers/youth workers		3	137.00	411.00
		Skilled workers		0	102.00	0.00
		Administrative staff		0	78.00	0.00
932558195	O7	Managers	Slovenia	0	164.00	0.00
		Teachers/trainers/researchers/youth workers		5	137.00	685.00
		Skilled workers		0	102.00	0.00
		Administrative staff		0	78.00	0.00

Cooperation to promote innovation and exchange through exchange of good practices: KA2
KA202 - Strategic Partnerships in Vocational Education and Training

946316869	O8	Managers	Germany	0	280.00	0.00
		Teachers/trainers/researchers/youth workers		24	214.00	5,136.00
		Skilled workers		0	162.00	0.00
		Administrative staff		0	131.00	0.00
999894916	O8	Managers	Portugal	0	164.00	0.00
		Teachers/trainers/researchers/youth workers		9	137.00	1,233.00
		Skilled workers		0	102.00	0.00
		Administrative staff		0	78.00	0.00
Total				526		99,454.00

7.5. Multiplier events

PIC of the Organisation Organising the Event	Event no.	Country of the event venue	Number of domestic participants	Grant per domestic participant	Number of foreign participants	Grant per foreign participant	Total amount (calculated)
932427730	E1	Croatia	40	100.00	0	200.00	4,000.00
999894916	E2	Portugal	23	100.00	0	200.00	2,300.00
Total			63		0		6,300.00

7.6. Educational, teaching and learning activities

This section does not apply to this project.

7.7. Grant for participants with disabilities

This section does not apply to this project.

7.8. Exceptional costs/special costs

PIC of the institution	Description of the cost item	actual costs	Grant-eligible costs (75%)
946316869	accounting support and project management by the Finance Department of VDI GmbH	15,000.00	11,250.00
946316869	Programming of a prototype version of the application form for the Engineering Card by the IT department of VDI GmbH for test and demonstration purposes	6,700.00	5,025.00
Total		21,700.00	16,275.00

7.9. Exceptional costs - bank guarantee

This section does not apply to this project.

Annexes

In this section, you must add additional documents that are required to complete the report.

Please note that all of the documents below must be uploaded here before submitting your report online.

Before submitting your report to the National Agency, please check that:

- All the necessary information about your project has been entered in the Mobility Tool+.
- You have completed the report form in one of the official languages of the Erasmus+ programme countries.
- You have uploaded all the required documents.
- The Declaration of Honour has been signed by the legal representative of the Beneficiary.
- The supporting documents required under the Grant Agreement have been attached.
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A system for the documentation and validation of non-formal and informal learning of engineers (NFIF)

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1. Introduction

1.1 The project idea – background information

Mobility plays an important part in our modern globalized societies, for everybody, including engineers. On one hand because of the demand for flexible deployment on an ever more international labor market. On the other hand because of the varying availability of highly qualified engineering personnel on the national level. In order to facilitate mobility, it is of the utmost importance to increase transparency. Employees as well as employers require user-friendly tools that offer competence profiles based on internationally recognized standards.

In the year 2010, a group of European engineering associations under the umbrella of the European Federation of National Engineering Associations (FEANI) began issuing a professional card for engineers in Europe.

The engineering card ever since that day follows the aim to create more transparency on the European labor market for engineers and to facilitate mobility of highly-qualified personnel by offering an instrument for the documentation and validation of engineering education, professional experience, and continuing professional development (CPD). Thus, the engineerING card functions as an important addition to the Bologna process and works within the framework established by the European Commission in the field of recognition of professional experience and training.

The system of the engineering card has been undergoing constant enhancements. Two important developments have led to the decision to start a project to modernize the card:

1. The rapid technological development cycles have led to an increased need with engineers for continuing professional development as part of life-long learning.
2. In addition to formal learning, non-formal and informal learning have become increasingly important as parts of the personal professional development strategies of engineers.

Before this background, several national FEANI member organizations grouped together with the idea to start a project in order to cope with these current trends, thus adding to the benefits the card has to offer to their members and all engineers in Europe.

The coordination of the project to enhance the engineering card lay with VDI - The Association of German Engineers as the largest engineering association in Europe. In addition to FEANI as the European umbrella organization, engineering associations from Croatia, Slovenia and the Czech Republic were equal partners in this project. Furthermore, the University of Porto added its expertise as an outstanding research institution in the fields of engineering education and continuing professional development. All organizations that participated in the project have several years of project experience with the engineering card and many other projects.

Furthermore, they brought into the project a vast amount of knowledge and experience in engineering education and further education of engineers.

The main goal of the entire project was the creation in several phases of an overall concept, i.e. a system, for the documentation and validation of non-formal and informal learning activities. This initial development phase was followed by a “implementation phase”. This meant the integration of the concept into the already existing database system of the engineering card of VDI by creating a prototype application for testing and marketing purposes. The entire process included the revision of VDI’s engineering card database as well as the creation of a blueprint for a handbook and several working documents.

During the course of the project, dissemination by FEANI and the project partners of the project goals and achievements to as many engineering organizations and other stakeholders as possible played a major part. This included information and consultation processes with different stakeholder groups on the European as well as the national level. However, dissemination was rather difficult and only three of the originally planned multiplier events were realized during the final phase of the project. Thus, some stakeholders were integrated into the project. From the view of the project partners, this has led to an increased publicity and broader acceptance of the project in particular and the engineering card in general.

In the long run, the wide dissemination of the engineering card as the only professional card exclusively for engineers will hopefully lead to growing transparency on the European labor market for engineers. This would benefit the European economy in two ways. On one hand, it would be highly beneficial for companies looking for qualified labor, thus helping to reduce the lack of qualified personnel in some countries. On the other hand, in countries with a large surplus of highly qualified personnel, professional mobility will increase with the availability of an instrument simplifying the often very complex and time-consuming recognition processes.

For European political decision makers the engineering card offers a prototype for a simple, non-bureaucratic and well-tested system for recognition of professional qualifications and training. The engineering card may therefore function as a blueprint for projects with similar goals.

1.2 Continuing Professional Development of engineers – background information

a.) The FEANI approach

FEANI has always believed that Continuing Professional Development (CPD) is of the utmost importance for engineers. In particular, since CPD is the core of life-long-learning of professional engineers at all levels of proficiency. Therefore, the need for CPD for engineers in Europe will continue to grow. CPD is a prerequisite for the maintenance of high-quality professional standards throughout an engineer’s entire working life.

An important question to be answered before going into detail is: What is Continuing Professional Development (CPD)? Simply speaking, it is the acquisition of knowledge, skills, and competences in the field of a person’s professional occupation. It comprises the acquisition of completely new as well as the further development of the already existing knowledge, skills, and competences.

CPD promotes the employability and mobility of individual engineers and may act as a personal job assurance on the increasingly globalized labor market. CPD is an individual's personal responsibility. However, it has to be planned and requires the cooperation, encouragement, and support of employers as well as professional and academic institutions.

CPD is of crucial importance for sustaining the competitiveness of the European industry on the global market, where competitive advantages can be gained by the application of high-end skills in the development of leading-edge technologies.

To deal with the CPD issues most efficiently, FEANI in 1993 established a Continuing Professional Development Committee (CPDC). The CPDC continued to work until 2011, when it became part of the European Monitoring Committee (FEANI-EMC). The CPDC worked intensively on the formation of the FEANI Policy on Continuing Professional Development as well as on the encouragement and promotion of CPD within the FEANI national member organizations and also internationally.

The FEANI General Assembly in Lillehammer, Norway, approved the first version of FEANI's Policy on Continuing Professional Development on September 26, 1997. The FEANI General Assembly in Bucharest, Romania, approved the revised version on October 3, 2008

b.) The importance of CPD

A common opinion based on the current speed of development of technologies is that twenty percent of an engineer's knowledge become obsolete each year. This illustrates how important lifelong learning is for those working in the field of engineering.

In the past, an engineer completed their formal education and went through their working life based mostly on the knowledge, skills and competences gained during basic education or formal further development programs. Today, achieving the initial professional qualification is only the start of a long process of professional development. CPD can have a positive effect on salaries, personal motivation, and career progression in general. Therefore, it plays a prominent role in many countries and fields of occupation. Several professional associations are active in the promotion of CPD. However, there is still much room for improvement.

One result of the need for constant learning is that the nature of learning activities is undergoing rapid change, too. The general development of the increase of non-formal and informal learning acquisition therefore plays an important role for engineers.

This leads to a very important question: What is non-formal and informal learning? There is a lot of discussion going on concerning this question and sometimes they are highly theoretical. The project team has for reasons of practicability decided to pick out the definition used by CEDEFOP¹ and stick to it for the job at hand.

¹ CEDEFOP (2008): Terminology of European education and training policy. A selection of 100 key terms. Luxembourg.

1. Non-formal learning is defined as learning 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.
2. Informal learning is defined by CEDEFOP as not organized or structured in terms of objectives, time or learning support. Informal learning is in most cases unintentional from the learner's perspective.

Looking at the engineering card, so far the system offers engineers the option to document only formal learning activities, which are characterized by having a learning objective and a fixed time frame and by culminating in a formal certificate.

There is currently no possibility to document non-formal or informal learning activities and the classification even for formal learning activities was a very crude one based on highly simplified categories. This situation is very unsatisfactory, as a wide range of learning activities which are very important to an engineer in need of presenting a comprehensive competence development profile could not be documented and validated. The need to modernize the system to adapt it to current trends was one reason for starting this project.

c.) Prerequisites for successful CPD

There are three key elements for successful Continuing Professional Development from the individual or an organizational point of view.

Firstly, there must be a commitment by the individual to a process of self-development. Personal development plans are one valuable instrument to help people with evaluating their own situation and with projecting their further development. Key competencies have to be taken into account. Documentation and validation instruments support the creation of personal development plans, as they include self-reflection and self-evaluation.

Secondly, organizational structures must be adapted to make staff coaching and development one of the central activities of managers with personnel responsibility. Managers too, have to be trained, developed, rewarded, and promoted based on their performance in human resources management. Here again, documentation and validation systems support managers with HR responsibility by offering them all the valuable information to evaluate their employees' competences, thus allowing them to plan with the employees their further professional development.

Thirdly, organizations must be learning organizations, meaning that they strive to enhance the learning processes of their employees and that they possess a consistent and cohesive value system. Documentation and validation systems are again of great value here, as they allow an insight in many aspects of the development of the employees, e.g. their learning activities, topics relevant to the employees, etc. Far too many individuals leave continuing professional development to others. The bigger the company, the more there seems to be a tendency to look to the training department or human resources to provide CPD. This mind-set is dangerous, because responsibility passes from the individual to the or-

ganization. However, as mentioned above, no approach to CPD can work unless the individual is committed to its self-development. Success is to a large degree dependent on the frame of mind of the individual. People have to ask themselves how they want to develop their career, over the next year, over the next five years, or over an even longer period.

As illustrated above, one important element in the planning of a structured learning and career development process is the creation of a profile of a person's key competences. The engineering card offers a way to do this.

1.3 Documentation and validation of learning – international background

There are several initiatives and organizations around the world dealing with the documentation and validation of learning, be it formal, non-formal or informal in character. The following chapter offers a short overview of these organizations, initiatives, projects and systems from the field of documentation and validation of learning. They are not all engineering-specific and cover a wide range of instruments and methods for documentation as well as validation. The project team resorted to some of those initiatives and systems in the development of its system to document and validate non-formal and informal learning.

a.) Documentation – General

The **Association for Authentic, Experiential and Evidence-Based Learning (AAEEBL)**² in the United States of America is a leading non-profit professional association for advancing learning which uses digital technologies, especially e-portfolios. The AAEEBL community consists of academics promoting change in higher education through their practice, research, and the dissemination of ideas. These academics are working both from the bottom up and from the top down. The community is at the center of change on campuses, leading by example and by initiatives. AAEEBL is not a technology association, as such but rather an association of academics already adapting to the digital era, inventing practices and learning designs based in the reality of information technology as the default knowledge medium.

The **Europortfolio Project - European Network of e-portfolio Experts & Practitioners**³ is a project that started in 2013, funded by the European Commission. The project ended in 2015, but the portal and the community of e-portfolio experts and practitioners communicating here remain alive and vivid. The aim was to contribute to the realization of a European area for lifelong learning, using e-portfolios as a means to support reflective learning and practice as well as transparency and trust amongst the actors involved in education and employment. This was achieved by bringing together the community of European e-portfolio experts and practitioners and developing a Learning Community Portal as a space to publish, share and review data and resources on e-portfolio practices and technologies. So far, the Europortfolio community has been active and has developed guidelines, frameworks, training courses and other resources, as it is a forum open to everybody.

The **Centre for Recording Achievement (CRA)**⁴ in the United Kingdom is a national network organization and a registered educational charity. It seeks to promote the awareness of recording achievement and action planning processes as an important element in improving learning and progression throughout the world of education, training and employment. The CRA offers a range of services to further and higher education institutions, employers and professional bodies. This includes expert consultancy to support the implementation of Personal Development Planning (PDP) and e-portfolio,

² <http://www.aacebl.org/>

³ <http://www.e-portfolio.eu/>

⁴ <http://www.recordingachievement.ac.uk>

evaluation of existing practice, whether in relation to PDP/e-portfolio, employability or other initiatives, and an initiative seeking to implement Problem-Based Learning, and another looking to support student retention. CRA offers services for those interested in documenting professional records and achievements. Its members contribute at several levels to the process of documenting non-formal and informal learning.

b.) Documentation – Engineering Specific

Professional Development How to (PD How2)⁵ is a product of the Professional Development Partnership from IMechE, IMAREST, IET, IOP and RAeS in the United Kingdom. The partnership of several engineering and technology training organizations, professional organizations and companies provides many examples and guidelines for planning, doing, recording, reviewing, and applying for a qualification and for supporting employers.

The idea behind the project is that professional development can provide the drive to progress the career. It keeps engineers across the industry competitive and leads to better employability. Although Professional development is something each one does every day, only being conscious of this development will allow recording it and developing it in a systematic way in order to maximize the potential for lifetime employability. The fast changing job market has increased the demands on professionals to maintain documentary evidence of their continued competence themselves. With technology and scientific development advancing so swiftly, this is especially important to engineers.

Taking a structured approach to their professional development will enable engineers to demonstrate continuing commitment to the profession. Regularly reviewing the needs, and selecting appropriate learning activities will give the career focus and meaning.

Valuation and Qualification of Professional Engineers (VALORIE)⁶ is a system developed by the northern section of Ordem dos Engenheiros in Portugal. It is a website-based procedure available for engineers to record the activities of professional development on an individual basis. This record allows experts and officials of the association to analyze and validate the activities of each engineer allowing the valorization of the engineer's curriculum and professional status. The general objective was to develop a model of valorization and qualification of professional skills of engineers in order to increase their cross-border mobility. The Mutual Recognition Project for Certification of Valuation and Qualification of Professional Skills (VALORIE) is part of the range of initiatives designed to stimulate and develop common services, which aim to energize cooperation between entities, economic and social agents in the border area, facilitating partnership work between public and private entities in favor of perfect mobility of engineers.

EURORECORD - Professional Record of Achievement in Engineering⁷ proposes a system for documentation based on the recording of CPD for an engineer and on a competence framework with general and specific competences for each discipline. This approach allows the creation of personal

⁵ <http://www.pd-how2.org/introduction/index.cfm>

⁶ <http://valore.oern.pt/>

⁷ <http://info.tuwien.ac.at/hsk/sefi/papers/hagstrom.htm>

development plans and the implementation of a periodic assessment of the qualification done by the employer, the engineer or a professional organization. The assessment is achieved through the comparison of achievements with the professional framework.

Eurorecord is based on the fact that individual commitment to lifelong learning is increasingly recognized as a key for improved business performance for employers and career progression for individuals. Continuing education therefore needs to be based on an individually driven education system – or rather “learning system” – where individuals have learning agreements with a variety of parties, including their employer, their professional body, and different academic and other providers. This requires a common language and currency both to improve communication and coordination between the partners, and to enable individuals to achieve coherence in their overall learning plans and activities. At the same time, the growing awareness and recognition of the need for lifelong learning creates a demand for greater transparency of qualifications, competences and achievements across corporate and national boundaries.

c.) Validation – General

Observal Net – European Observatory of Validation of NFIF⁸ is a system set up in Europe with the aim of creating a stakeholder centered network of organizations supporting the validation of non-formal and informal learning in Europe based on the formation of national working groups in the eight participating countries of the project. Each national working group worked towards bringing together key stakeholders in VNIL (validation of non-formal and informal learning) and political decision-makers at national level in order to coordinate policy implementation in the field. These national networks were supplemented by a cross-national level of networking, which focused on the following three thematic areas: the role of grassroots initiatives in supporting VNIL and strategies towards mainstreaming these, the competence profile required for VNIL practitioners, and the success factors in the implementation of VNIL in employment settings.

The **European Guidelines for Validating Non-formal and Informal Learning (CEDEFOP)⁹** are written for individuals and institutions responsible for the initiation, development, implementation, and operation of validation arrangements. The ambition of the guidelines is to clarify the conditions for implementation, highlighting the critical choices to be made by stakeholders at different stages of the process. This publication, together with other publications from CEDEFOP, is a reference for European stakeholders in the area of NFIF. It contains examples, guidelines, legislations, and rules for all European Union countries and associated countries that allow to understand local characteristics that may also affect the documentation and validation of non-formal and informal learning of engineers.

The **Organization for Economic Cooperation and Development (OECD)** is also active in the field of recognition of non-formal and informal learning¹⁰. As people are constantly learning everywhere and at all times, it is very likely that this learning, taking place at home, at the workplace or elsewhere,

⁸ <http://www.observal-net.eu>

⁹ <http://www.cedefop.europa.eu/en/publications-and-resources/publications/4054>

¹⁰ <http://www.oecd.org/edu/skills-beyond-school/recognitionofnon-formalandinformallearning-home.htm>

is a lot more important, relevant and significant than the kind of learning that occurs in formal settings. However, learning that occurs outside the formal learning system is not well understood, made visible or, probably as a consequence, appropriately valued. Until this OECD activity on the recognition of non-formal and informal learning involving 23 countries on five continents, it has also been under-researched (see also ongoing EU work). Most research has focused on learning outcomes from formal education and training, instead of embracing all types of learning outcomes, allowing visibility and portability of such outcomes in the lifelong learning system, in the labor market or in the community. In 1996, the OECD education ministers agreed to develop strategies for “lifelong learning for all”. Ministers of labor, ministers of social affairs and the OECD Council at ministerial level have endorsed the approach. The concept of “from cradle to grave” includes formal, non-formal, and informal learning. The importance of this approach may now be clearer than ever and non-formal and informal learning outcomes are viewed as having significant value. Policy-makers in many OECD countries, and beyond, are therefore trying to develop strategies to use all the skills, knowledge and competences – wherever they come from – individuals may have at a time when countries are striving to reap the benefits of economic growth, global competitiveness and population development.

The **American Nurses Credentialing Center (ANCC)**¹¹ uses e-portfolios and validation for renewal of professional certification of its members. Presents resources that are available online allow members to proceed with the recording of the professional developments, to present their records to accreditation committees, and to obtain certificates for employers.

ANCC offers the Advanced Genetics Nursing board certification through portfolio assessment. It provides a valid and reliable assessment of the entry-level clinical knowledge and skills of registered nurses practicing in the genetics nursing specialty after initial licensure and graduate education. Upon fulfillment of the eligibility requirements and successfully passing the portfolio review process, nurses are awarded the credential “Advanced Genetics Nursing-Board Certified” (AGN-BC). This credential is valid for 5 years. It is possible to continue to use this credential by maintaining the license to practice and meeting the renewal requirements in place at the time of the certification renewal.

The **Competency and Credentialing Institute (CCI)**¹² offers a documentation and validation procedure that is based on a self-management of the individual CPD activities. A peer committee based on the online documentation provided will analyze these. It is an example of personal development managed by the professional verified by peers.

The certified status of an individual RNFA is conferred by CCI for a period of five years, at which time a CRNFA may seek recertification.

¹¹ <http://www.nursecredentialing.org/AdvancedGenetics>

¹² <http://www.cc-institute.org/home>

d.) Validation – Engineering Specific

My CPD - Engineers Ireland¹³ is the result of the decision of Engineers Ireland to make CPD mandatory with a cycle of recording of one year. The tool to support members is online and allows a recording at own pace and for different purposes. The association performs the check of the records in accordance with internal quality rules. The new policy has become effective on 1 January 2017. All non-student members are required to undertake and record 35 hours of CPD activities each year. Having a record of CPD activities is essential to be able to demonstrate that one has undertaken the required 35 hours CPD per annum.

The **Board of Engineers Malaysia (BEM)**¹⁴ has a system of mandatory CPD for its members based on a record delivered every three years with an annual minimum. This recording is based on a written form that states all CPD activities according to those accepted and to the limits for each type of CPD. The **FEANI CPD - Guidelines for issuing credits for CPD**¹⁵ forms the basis for a system of awarding credits for Continuing Professional Development (CPD) of engineers. This system may be used by the FEANI member organizations on a voluntary basis. For the documentation of the CPD activities, the system provides several categories.

¹³ <https://www.engineersireland.ie/cpd-training/cpd-policy.aspx#>

¹⁴ <http://www.bem.org.my/v3/index.html>

¹⁵ <http://www.feani.org/site/index.php?id=287>

1.4 Non-formal and informal learning in the project countries – national background

a.) Austria¹⁶

In accordance with the Austrian national strategy for the validation of non-formal and informal learning (NFIL), Austria adopted the recommendations of the European Council concerning the validation of non-formal and informal learning¹⁷ as defined in the Law on the Engineering Profession 2017¹⁸.

With the help of this qualification process for engineers, the Austrian title “Engineer” can be better communicated and becomes comparable at European level. This qualification process, however, does not affect the legal responsibilities and competences of the institutions that have so far been involved in the validation process. Therefore, it does not automatically lead to the same formal and academic qualifications (e.g. grant access to further continuing education programmes or professional career pathways, such as master programmes, in particular).

The professional classification of the “Engineer” has been designed as a qualification on NQF/EQF-level 6. This qualification level is described in such a way that it is to be seen as independent of structural elements, such as the place of learning (university versus school/college) or the duration of learning. It is exclusively based on learning outcomes, e.g. the knowledge, skills and competences which the graduates have acquired after completing their education and which they must give evidence of. This procedure shall show that the Austrian engineer - through their technical education and training and work practice over several years - is the equivalent of a person that has completed a technical university education at bachelor level regarding the requirements of the economy and the labour market in another country.

The certification procedure itself consists of two parts: The first part is a **written application** in which the applicant has to prove that all formal requirements have been fulfilled. It includes a comprehensive description of all activities that are part of the job. This comprises all the evidence that confirms the professional practice, which also serves as the basis for the second part of the certification procedure. There, the applicants have to describe in detail the activities listed and give examples of projects in which they participated or which they led or managed. In these descriptions of the activities carried out in their jobs, the applicants shall demonstrate and explain plausibly, by means of examples from their work, that they have carried out genuine engineering activities and that those activities are characterised by all the features that have been defined as requirements for the acquisition of such a qualification.

The second part is an **expert interview** between the applicant and the certification commission, which consists of two technical experts. In the course of this expert engineering discussion, the applicants have the chance to give in-depth information on their professional practice. At the same time, the

¹⁶ The Austrian FEANI member organization offered to add an additional perspective concerning an active policy with regard to non-formal and informal learning. The project team therefore decided to add Austria here, despite the Austrian engineering association not being a partner of this project.

¹⁷ COUNCIL RECOMMENDATION of 20 December 2012 on the validation of non-formal and informal learning 2012/C 398/01

¹⁸ Federal law on the generic title of the qualification “Engineer” (Law on the Engineering Profession 2017 – IngG 2017)

members of the certification commission may inquire additional information on their activities, discuss those, and exchange with the applicant ideas and experiences from their own work practice. It is the goal of this expert interview to confirm the fulfilment of all criteria for the acquisition of the engineering qualification. A common positive result of such a certification must be achieved by both members of the commission unanimously and must be recorded in writing.

Certification Boards

Certification Boards are appointed by the Federal Ministry of Science, Research, and Economy and must fulfil certain personal and organisational requirements laid down by the law, as well as have an internal system of quality assurance. In the fields of agriculture and forestry, the Federal Ministry of Agriculture, Forestry, Environment, and Water Management will carry out the certification, in cooperation with the University College for Agrarian and Environmental Pedagogy.

Certification commission

The certification commission consists of two professional experts from the respective technical strand of education who also possess a professional qualification as an engineer themselves or have completed a technical study program in tertiary education. One member of the certification commission has to work in a study discipline that is related to the professional practice and experience of the applicants, the second member of the commission has to be a member of the teaching staff at a related Higher Technical College, a University of Applied Sciences, or a University. In addition, the two commission members must be qualified to assess the correctness of the submitted documentation of the attested non-formally and informally acquired knowledge, skills and competences, in particular with the help of reference projects which the applicant was involved in during his/her professional practice. In this connection, it is the task of the Certification Boards to provide appropriate training for the members of the certification commission.

Criteria

The awarding of the qualification title “Engineer” is based on the submission of learning outcomes at NQF/EQF level 6 which the applicant has acquired through his/her work-practice activities in specific areas of engineering work, following the completion of a Higher Technical College or a comparable formal education. These specific engineering learning outcomes have been defined by a team of experts from the Trade and Industrial Associations, the Universities, the Universities of Applied Sciences and the Higher Technical Colleges under the coordination of the Institute for Research and Development in Vocational Education and Training (ibw) and were set in accordance with a Ministry Regulation¹⁹.

¹⁹ Regulation of the Federal Ministry of Science, Research and Economy, determining (according to § 3 of the Austrian Law on the Engineering Profession 2017) the technical and trade educational strands as well as the activities which are to be acknowledged as work practice activities in the technical sector.

Quality assurance

In order to assure the quality of the awarding process of the professional education title “Engineer” within the whole quality management system and in the individual Certification Boards, an external scientific monitoring process shall be implemented. Within this framework, the Certification Boards will be monitored with regard to the legal requirements, their quality and their validity, as well as with reference to their impact on the economy and the labour market. The results and conclusions represent a suitable basis for the future development of the system and are going to be published on the websites of the ministries involved.

b.) Croatia

Croatia adopted the Croatian Qualifications Framework (CQF) in 2014. The goal is to reform the education system. In order to do so, the CQF promotes:

- outcome orientation of educational programs,
- alignment of educational programs with the needs of the labor market,
- transparent criteria for assessment of learning outcomes,
- development of criteria and procedures for evaluation and recognition of outcomes of non-formal and informal learning,
- and strengthening and further development of lifelong learning and quality assurance of qualifications.²⁰

The act established a national qualifications framework based on the European Qualifications Framework (EQF). It also creates a link to the Qualifications Framework of the European Higher Education Area (QF-EHEA) and indirectly to other national qualification systems in Europe.

In Croatia, 68 professional activities have been categorized as regulated professions. Eighteen of them belong to the field of engineering. All engineers of regulated or non-regulated professions have to complete a formal education. In addition, non-formal as well as informal education are an essential part of the professional life of the engineer as they are an indicator of personal development.

However, while formal education is mandatory, the non-formal education is in parts mandatory, but mostly voluntary. After finishing their formal education and with an obligatory professional experience engineers in Croatia have to pass a professional exam organized by different authorities. This is a prerequisite for becoming a certified engineer.

Many legal documents put strong emphasis on the need for non-formal and informal education for particular professions. It is widely recommended and sometimes is a requirement as it is seen as the best solution for continuous professional development (CPD) and the acquisition of knowledge and skills of professionals.

²⁰ Act on the Croatian Qualifications Framework (Official Gazette, No 22/13, 41/16) <https://ec.europa.eu/migrant-integration/index.cfm?action=furl.go&go=/librarydoc/the-croatian-qualifications-framework-act-official-gazette-no-22/13>.

While the need for non-formal and informal education is highlighted, the only regulated engineering professions with mandatory non-formal education are energy certifiers (architects, civil engineers, mechanical engineers and/or electrical engineers) as the ones responsible for carrying out energy audits of buildings and issuing energy certificates.²¹

The mechanisms and methodologies of learning and the educational processes in non-formal and informal education are diverse and depend very much on the profession. Various institutions, associations, and chambers provide non-formal and informal education.

The Croatian Engineering Association (Hrvatski inženjerski savez, HIS) and some of its member associations are providers of non-formal education for the purpose of CPD in the field of engineering.

The Croatian Chambers of Engineers are autonomous and independent professional organizations focused on the regulation of engineering profession. They are also providers of non-formal and informal education as they provide training programs. They establish educational standards for professional training, encompassing contents, training conditions, and methods of implementation and monitoring.

In addition to HIS and the chambers, non-engineering associations and educational organizations are equally important providing informal education mainly in the field of soft skills.

In general, professional non-formal education is voluntary; however, it has its basis in a legal framework.

The Croatian Ministry of Construction and Physical Planning is the competent authority for the policy and the legal framework governing non-formal and informal education. This framework is based on several legal documents that have been issued by the ministry, e.g. Act on the Chamber of Architects and Chambers of Engineers in Construction and Physical Planning²², Act on Physical Planning and Building Tasks and Activities²³ and Ordinance on professional examination of persons carrying out Construction and Physical Planning²⁴.

Based on the provisions created by these legal documents, persons may pass official examinations for continuing professional development that include different forms of competence acquisition.

c.) Czech Republic

The non-formal education in the Czech Republic has very strong roots in the past. The system was originally developed with focus on children and adolescents. By now, there are different forms of non-formal education for all age groups.

State-run-institutions, various types of educational bodies and a wide range of private companies or NGOs are providing this non-formal education. The most important legal document in this respect is the Act on the Validation and Recognition of the Outcomes of CVET, effective since 2007. The law

²¹ Building Act (Official Gazette No 153/13)
www.mgipu.hr/doc/Propisi/Building_Act.pdf.

²² Act on the Chamber of Architects and Chambers of Engineers in Construction and Physical Planning (Official Gazette No 78/15)
www.mgipu.hr/doc/Propisi/Act_on_Chambers.pdf.

²³ Act on Physical Planning and Building Tasks and Activities (Official Gazette No 78/15)
www.mgipu.hr/doc/Propisi/Act_on_tasks_activities.pdf.

²⁴ Ordinance on professional examination of persons carrying out Construction and Physical Planning (Official Gazette No. 129/15).
<http://www.mgipu.hr/default.aspx?id=9858>.

creates a legislative framework for the recognition of qualifications acquired through non-formal education and informal learning.

The framework for **non-formal education for adult professionals** in the Czech Republic are the National Register of Qualifications (NSK) and the National System of Occupations, which are closely linked.²⁵ The NSK is based on the need of the labor market, which is reflected by the National System of Occupations. The NSK qualifications standards are used in the development of national secondary education curricula and for retraining programs.

The National Register of Qualifications (NSK) is a publicly accessible register of all vocational qualifications and the underlying qualification and assessment standards. It has been under development since 2005 and is based on the requirements for the performance within certain professions. One part of the NSK is a system of qualification levels. The eight levels correspond to the levels of the European Qualifications Framework (EQF). The NSK defines requirements for the competence of particular qualifications/skills regardless of the method of acquirement.²⁶

The development of the framework and the register for vocational qualifications is a key instrument in the national strategy for lifelong learning aiming at a more permeable education and training system. One of the main elements of this strategy is the creation of a system for the recognition and validation of learning outcomes, irrespective of the way in which they have been achieved.

The employers define vocational qualifications by basing them on descriptions of occupations as defined in the National System of Occupations. Sector councils group employers together and are coordinated by a consortium representing the Chamber of Commerce of the Czech Republic, the Confederation of Industry of the Czech Republic, and Trexima, a consulting agency.

The **legal framework** is based on a policy approved by the Czech government in 2007 under the title “The Strategy of Lifelong Learning in the Czech Republic”. This strategy plays a major role in the validation of non-formal and informal learning. It is output-oriented and based on the premise that lifelong learning is a continuous process, which can follow multiple paths. This is a fundamental document for the other cross-sectional and individual concepts and policies in this field and constitutes a comprehensive concept for lifelong learning.

The recognition of the diverse educational paths is based on the recognition and validation of learning outcomes in standardized examinations. The legal framework is the foundation of the NSK . It defines its contents, how and by whom qualifications are defined and approved, and by what procedures qualifications are recognized and validated.

The NSK distinguishes between two types of qualification:

- complete (comprehensive) vocational qualifications, which means the ability to work in a particular occupation,

²⁵ www.narodnikvalifikace.cz

²⁶ The English version of the NSK portal provides simplified descriptions of vocational qualifications. Detailed descriptions of competences as defined in assessment standards are available in the Czech version of the portal www.narodnikvalifikace.cz/en-us/.

- and vocational qualifications, which means the ability to perform particular activities or groups of activities which lead to employability in the labor market. Vocational qualifications can be part of complete vocational qualification.

A law specifies the procedures for awarding vocational and complete vocational qualifications. A pair of standards, a qualification standard (a list of expected units of learning outcomes) and an assessment standard (set of evaluation criteria) describes each vocational qualification.

In the Ministry of Education's directive 208/2007 the legal framework was improved by defining more precisely various aspects of its implementation, particularly the authorization of bodies to award qualifications, the conducting of examinations, and deadlines. The directive also established the sector councils, thus adding an important aspect to the NSK.

Concerning the recognition and validation of learning outcomes, the NSK provides a collection of standards, allowing the objective verification and recognition of competences. Authorized bodies in accordance with the relevant evaluation standards award vocational qualifications. Every organization, which wishes to conduct evaluations for a particular partial qualification, must request approval from the authorizing body, which must be an agency of the Czech government.²⁷

At the examination, the applicant must demonstrate all the competences listed in the qualifications standard according to the criteria in the assessment standard. In case of success, the applicant is awarded the vocational qualification.

The awarding of complete qualifications can take place in two ways:

- by graduation from a program of study on successful completion of the examination required
- or by acquiring the corresponding vocational qualifications and then completing the examination for the corresponding program of study.

The Czech Republic does not yet have a comprehensive **National Qualifications Framework** (NQF for lifelong learning). Therefore, it referenced its present qualifications system and qualifications framework of the NSK to the European Qualifications Framework. Nevertheless, the members of the EQF Advisory Group stressed the importance and necessity of development of the comprehensive NQF, to make the Czech referencing to the EQF could be acceptable and comparable.

Many steps have already been taken in the Czech Republic. There are adopted level descriptors of the NSK and there is a proposal for the Qualifications Framework for Tertiary Education. Sector council working groups have been created. The members of the working groups are mostly external experts in the given field. More and more companies and other stakeholders involved in the labor market understand the advantages and benefits of participating in sector councils. Currently there are a total of 29 sector councils covering the needs of most sectors.

The NSK defines the rules **for referencing individual qualifications to qualification levels**. They are derived from the levels of the individual competences described by learning outcomes.

²⁷ www.narodnikvalifikace.cz

Summing the situation in the Czech Republic up, it can be said that further education is of marginal interest. There is no effective system of coordination, cooperation, and communication of related actors. The quality of further education is not regulated; a system of evaluation of educational organizations is not used. There is still no legislation on further education. The Ministry of Education, Youth, and Sports and the Ministry of Labor and Social Affairs have the biggest influence on the government-financed further education. However, their competencies have not been clearly defined. There is the functioning system of the National Register of Qualifications and the National System of Occupations. As said before, the National Register of Qualifications provides an overview of nationally recognized qualifications, which can be obtained by validation of non-formal and informal learning. However, validation only concerns vocational qualifications (up to level 4).

d.) Germany

Learning at work is an “integral part of the local culture” in Germany and the system of vocational training, which qualifies as non-formal learning, is widely used.²⁸ Further education is a major aspect of the professional development of an employee.²⁹ Non-formal and informal learning play an essential role in the German education system and above all in the “Dual System” of vocational education, but still there is no formalized system for their recognition.³⁰

The system of formal education is still a condition sine qua non in Germany and the high acceptance and prominent position of formal learning has led to a rather limited need for action concerning non-formal and informal learning recognition.³¹

Traditionally, people learned and received recognition of the learning outcomes acquired within the formal education system; their work-life was based almost exclusively on this learning.³² This sequential mode of learning has become obsolete because of rapid technological and social changes.³³

Due to these developments, the interest in non-formal and informal learning has been growing since the 1990s; lifelong learning aiming on an extensive professional and personal competence development has become more and more important.³⁴

The Bruges Communiqué of 2010 included an agreement by the states of the European Union on the objective to create systems for the recognition of non-formal and informal learning.³⁵ CEDEFOP’s “European inventory on validation of non-formal and informal learning 2014” states that in Germany a strategy is in development and in addition, multiple frameworks are in place covering different sectors

²⁸ Werquin, Patrick (2010): Recognition of non-formal and informal learning. Country practices. Paris, p. 15.

²⁹ Federal Ministry of Education and Research (BMBF) (2008): Stand der Anerkennung non-formalen und informellen Lernens in Deutschland im Rahmen der OECD Aktivität “Recognition of non-formal and informal learning”, p. 10.

³⁰ Werquin (2010), p. 34.

³¹ Münchhausen, Gesa and Ulrike Schröder: Erfassung von informell erworbenen Kompetenzen. Impulse aus europäischen Projekten nutzen. In: BWP Berufsbildung in Wissenschaft und Praxis 6 (2009), p- 19-23, p. 20.

³² Gaylor, Claudia, Nicolas Schöpf and Eckart Severing (2015): Wenn aus Kompetenzen berufliche Chancen werden. Wie europäische Nachbarn informelles und non-formales Lernen anerkennen und nutzen. Gütersloh, p. 2.

³³ ibid.

³⁴ Federal Institute for Vocational Education and Training (BIBB) (2012): Erfassung und Anerkennung informellen und non-formalen Lernens. Diskussionsvorlage für Workshop 3 am 30.03.2012 in Bonn, p. 1.

³⁵ https://ec.europa.eu/education/policy/vocational-policy/doc/brugescom_en.pdf.

of the labor market.³⁶ The report also states that many challenges remain, e.g. access to the system, awareness, social recognition, fragmentation, and financial sustainability.³⁷

In 2016, the Federal Institute for Vocational Education and Training (BIBB) conducted a survey on the recognition of informal and non-formal learning in Germany, asking experts for their appraisal. Seventy-five percent of the respondents said that they would like to see more recognition of non-formal and informal learning; seventy percent said they would like to see a national system of recognition.³⁸ In Germany, the National Qualifications Framework (DQR) implemented in 2013 explicitly includes non-formal and informal learning; however, so far there is neither a legal basis nor a uniform process.³⁹ Most experts that participated in the above-mentioned 2016 survey regard the pronounced goal to have a national system in place in Germany by 2018 as too ambitious.⁴⁰

Despite this situation, it would be far from true to say that non-formal and informal learning and their recognition have no place in Germany. As mentioned above, the National Qualifications Framework takes into account non-formal and informal learning. Additionally, there are several systems in place that allow for non-formally or informally acquired learning outcomes to be recognized.

The “Externenprüfung” (external evaluation) is a process of having non-formally and/or informally acquired competences recognized for the purpose of getting a formal degree. It is a document-based validation of competences.⁴¹

ProfilPASS is an instrument for a systematic identification and documentation of competences, regardless of where they have been acquired or their field of learning.⁴² The result is a competence portfolio based on a detailed competence analysis, achieved through a guided process of self-evaluation.⁴³

The goal is to create motivation and an awareness for personal strengths.⁴⁴

The initiative ANKOM (Anrechnung beruflicher Kompetenzen auf Hochschulstudiengänge) aims on crediting professional competences as part of the acquirement of a higher education degree by developing a reference framework to support the recognition process, thus increasing the permeability within the education system.⁴⁵

Other projects aim on identifying the demand for recognition of informally acquired competences, e.g. the project AIKO looking into the demand within the metal and electric industries, or on developing a credit system to facilitate the recognition of non-formal and informal learning in Germany, e.g. the pilot project DECVET (based on the European project ECVET).

Many interest groups in Germany have been looking into the question of recognition for some years and discussions continue. Some of the stakeholders ask whether an additional system is really needed

³⁶ CEDEFOP (2014): European inventory on validation of non-formal and informal learning 2014. Executive summary, p. 2-3.

³⁷ *ibid.*, p. 8.

³⁸ Velten, Stefanie und Gunvald Herdin (2016): Anerkennung informellen und non-formalen Lernens in Deutschland. Ergebnisse aus dem BIBB-Expertenmonitor Berufliche Bildung 2015, p. 3.

³⁹ *ibid.*, p. 5.

⁴⁰ *ibid.*, p. 12.

⁴¹ BIBB (2012), p. 6.

⁴² CEDEFOP (2014), p. 4.

⁴³ Federal Ministry (BMBF) (2008), p. 45.

⁴⁴ *ibid.*

⁴⁵ *ibid.*, p. 49.

and warn of the creation of parallel structures; others emphasize the chances for employees since, until now, professional qualifications in Germany are recognized mainly based on formal training.⁴⁶

The number of validation approaches on federal and state level reflects the pluralism in the German education system and there is no overall coordination.⁴⁷ The political structures of the federal system are a challenge when talking about the introduction of a national system for recognition, since there is a substantial need for coordination and a heterogeneity of interests.⁴⁸ Germany lacks a national strategy for validation so far and the country still seems to be in a phase of developing and testing validation concepts and methods that could lead to a federal system, however, the cultural change takes time in a country with a tradition of highly developed formalized education and further training structures.⁴⁹

e.) Portugal

In Portugal, the validation process for non-formal and informal learning was instituted in public policies in 2001 with the creation of a network of six centers for the recognition, validation and certification of competences. These centers were called *Novas Oportunidades* (New Opportunities).

In these centers, through a process of recognition and validation of formal and non-formal learning, people over 18 years could obtain a school certificate for levels 1 to 4 of the European Qualification Framework (EQF). This validation process is part of a public policy that has progressively come to gain social visibility, revealing itself as a political asset in schools and as a part of the professional qualification of the Portuguese population.

In 2009, there were 459 centers of recognition all over Portugal. The process of validation of qualifications through competences consists of several parts: the presentation of a personal dossier, the profiling of the competences of the candidate, complimentary training, examinations in areas where the candidate shows shortcomings, and finally validation of the competences by comparison to the corresponding professional qualifications. Irregularities in the process of profiling and in the examinations led to a decrease in the activity with the imposition of stricter rules and procedures.⁵⁰

Concerning higher education academic institutions since the 1980s are entitled by law to validate competences and concede equivalence to part of the academic program. The process consists in registration, an interview to analyze the curriculum and the candidate motivation, a test of knowledge in specific areas, and access to the academic program with eventual approval of parts of the program. A jury from the respective institution conducts the process. The candidates for this recognition of competences must not already have a degree from a higher education institution.⁵¹

⁴⁶ Warum benötigen wir die Anerkennung von non-formalem und informellem Lernen. In: NABIBB (Hg.): Bildung für Europa. Journal der Nationalen Agentur beim Bundesinstitut für Berufsbildung, 21 (2014), p. 7-9, p. 7-9.

⁴⁷ CEDEFOP (2014), p. 9.

⁴⁸ Werquin (2010), p. 19-20.

⁴⁹ Erfahrungen einen anerkannten Wert geben. Interview mit Prof. Dr. Peter Dehnbostel zu Chancen und Bedingungen eines nationalen Validierungssystems. In: In: NABIBB (Hg.): Bildung für Europa. Journal der Nationalen Agentur beim Bundesinstitut für Berufsbildung, 21 (2014), p. 6-10, p. 6.

⁵⁰ More and latest information can be found at <http://www.angep.gov.pt/>.

⁵¹ More information can be found at <http://www.dges.mctes.pt/DGES/pt/Estudantes/Acesso/ConcursosEspeciais/FAQ/Maiioresde23/>.

Concerning continuing professional development, there is a system to record the achievements of each engineer in terms of acquisition of competencies. This system was developed by Ordem dos Engenheiros, Região Norte as part of the project called “VALORIE”.⁵² The VALORIE recording system is an online system available for members only. The system provides the option for external users, e.g. companies or accreditation bodies, to validate the competences.

f.) Slovenia

In Slovenia two legal possibilities of documentation and validation of non-formal and informal learning have been established. The first option is the legal framework, which has its basis in the formal educational systems, with all necessary and well-defined requirements. The second possibility is the National Qualification Framework (NQF) with the basis in the European Qualification Framework (EQF).

The system of national vocational qualifications enables the possibility for validation of knowledge, which has been obtained outside the formal educational system during the work with free time activities, the participation in non-formal training programs, with voluntary work, self-learning, etc.

The analyses of possibilities show that the documentation and validation of non-formal and informal learning in Slovenia is set for professions according to the level of education and the Slovenian qualification framework for the levels from 2 to 6.

Introduction

Systematic solutions, which enable the validation of non-formal and informal learning, do not have an added value just for individuals but present an added value to the entire educational system and the economy.⁵³ The representatives of public, private and civil associations have pointed out reasons for validation of learning outcomes obtained in non-formal and informal forms of learning:

- Validation of experiences, obtained with non-formal and informal learning gives the opportunity for increasing mobility and flexibility on the labor market.
- Validation of non-formal and informal learning is an opportunity for employers for better recognition of educational needs of employees, their skills and in job requirements.
- Validation of non-formal and informal learning offers an opportunity to make access to the formal educational system easier.
- Validation of non-formal and informal learning can improve the effectiveness of the educational system: for an individual with obtained non-formal and informal learning the period of formal education can be accelerated, shortened and made more cost-efficient.
- Validation of non-formal and informal learning offers opportunities to excluded and de-privileged individuals: the validation of obtained competences can help excluded and socially de-privileged individuals at the re-integration to the labor market and the whole society.

⁵² <http://valore.oem.pt/>

⁵³ Ugotavljanje, vrednotenje in priznavanje neformalno in priložnostno pridobljenega znanja odraslih, Tanja Vilič Klenovšek, et al. Andragoški center Slovenije, ISBN 978-961-6851-34-3, 2013.

The first step in validation of non-formal and informal obtained knowledge in Slovenia was to set up a system of validation on national vocational qualifications, which is defined in the Law on National Vocational Qualification (NVQ) from the year 2000. The system NVQ was established according to the requirement which was articulated in the White Paper on Education and Training in the Republic of Slovenia, published in the year 1995.

The NVQ system enables individuals to gain national vocational qualification on the basis of work experiences which are verified by a professional body – commission. It enables the validation of knowledge, skills and competences, obtained outside the formal educational systems, to be recognized, validated, and documented in an official document, the certificate. The procedure for obtaining a certificate is faster than the procedure for achieving formal education, gives the possibility for rapid response to the changes of labor market, and offers more opportunities to individuals to get into employment.

The resolution about the national program for education of adults for the period 2013-2020 defines as a long-term goal the design of a national system for recognition and validation formal and non-formal obtained knowledge of adults.

The validation and certification process is closely connected with the certification process and the process of getting the certificate as a confirmation of obtained professional qualifications in the national system of professional qualifications.⁵⁴

The normative regulation of the certification system is heterogeneous. With the Act of national professional qualifications, a unification of the systems has been started, but there are many professions with special features, which have their history in the nature of the profession.

The analysis of the normative regulation of the area of validation and evaluation of education and qualifications shows that the Slovenian legislation has very different forms of validation and evaluation of non-formal and informal education and learning. The Act of national professional qualifications has the intention to create a unique system to solve the difficulties (heterogeneity and diversity of the professions), but still there are terminological and conceptual differences to be solved. The validation and evaluation of knowledge and skills is in the legislation in acts and other documents defined very differently. This variety of definitions and procedures is not based on differences in professions but in the current way of solving on specific areas without a brighter and uniform methodology.

Conclusions

First steps in the area of recognition and validation of non-formally and informally obtained competences in Slovenia have been taken in the area of professional qualifications with the introduction of the system of national professional qualifications. The goal was to recognize the competences of individuals and to validate it in the way that can be established on the labor market.

⁵⁴ Zaključno poročilo o rezultatih opravljenega raziskovalnega dela na projektu v okviru CRP »Konkurenčnost Slovenije 2006 – 2013« Razvoj instrumenta za priznavanje znanja na postsekundarni ravni, Šifra projekta V5-0432, Dejan Hozjan, et al., Univerza na Primorskem, Fakulteta za management Koper, 2010.

The system of recognition and validation was spread into the area of formal education with the aim to enable individuals with the validation of former obtained competences easier access to the formal education, to further develop their education or to reach certain educational levels.

In the last years, under the influence of EU guidelines, the attention has transferred to the third area which is focused on documentation and description of knowledge and experiences of individuals for different purposes (included the employability and the participation on formal education system), especially the personal development of an individual and his key competences/basic abilities.

The increased visibility of the system for documentation and validation of non-formally and informally obtained learning and the development of the overall trust into the system are important. In addition, it is still a challenge for the future to set up a national system for the documentation and validation as the EU proposed it.⁵⁵

⁵⁵ Recommendation of the EU council about the non-formal and informal Learning, December 2012.

2. Documentation and validation of non-formal and informal learning of engineers

2.1 The documentation and validation of learning activities

a.) Introduction

The rapid development cycles in technology have led to a growing necessity for engineers to constantly develop their professional competences. Life-long learning is essential for their professional survival. As has been shown in section 1.3 of this concept, several organizations have developed systems to support engineers in the documentation (and validation) of their learning activities. The idea behind these mechanisms is to help employers and other interested parties to make decisions about whom they can trust to provide engineering based goods and services. On the other side, it supports the self-reflection process that is part of professional development and helps professionals to visualise their achievements, thus allowing them to come to an assessment of their competences.

The concept presented here joins this collection of systems by adapting and further developing already existing approaches. The proposed structure for the system to document and validate non-formal and informal learning activities of engineers results from the prior analysis of documents, experiences, case studies, projects, and professional practices. It does not represent a completely new method or procedure, but is the result of the reflection upon already existent systems and methods.

Political decision-makers in Europe have realized that learning opportunities and qualifications are crucial for the economic development and growth of the union. Therefore, several European reference frameworks have been developed to facilitate transparency and comparability of the educational systems and the learning outcomes they produce and to support mobility on the labor market.

In order to make learning comparable, reference frameworks define descriptors for different competence levels. The European Consortium for Accreditation (ECA) defines qualification descriptors as being generic statements of the outcomes of study. They provide clear points of reference that describe the main outcomes of a learning activity often with reference to national levels. Descriptors can work as examples of competences expected from a certain qualification.

The levels defined by descriptors form the basis for the documentation and validation of non-formal and in-formal learning outcomes (NFIF) of engineers. Level descriptors are essential elements of reference frameworks. While they are technical in their character, these descriptors define what an individual is expected to know (knowledge), be able to do, and understand (skills and competences), having acquired a qualification at a specific level. Level descriptors are thus the single most important element in the creation of an outcome-orientated documentation and evaluation system.

In order for descriptors to be effective, they have to

- be sufficiently detailed and multifaceted to capture the complexities of different types of learning,
- be sufficiently general to accommodate different national education and training systems,
- reflect the way qualifications are valued by economy and society,
- and be able to reflect how knowledge, skills, and competences increase in breadth, depth, and complexity when moving from lower to higher levels,

b.) Non-technical learning activities

In order to create a system to document and validate learning activities, the project team used several reference frameworks. For the **non-technical learning activities** it used:

- Common European framework of reference for languages⁵⁶
- DIGCOMP: A Framework for Developing and Understanding Digital Competence in Europe⁵⁷
- European Qualification Framework (EQF)⁵⁸

The use of these frameworks is based upon the European Commission's reference framework for lifelong learning⁵⁹, which defines several key competences. Not all of them were deemed relevant to the current project. However, four fields of activities are increasingly relevant to engineers, too. Therefore, the project team decided to include them into the system for documentation and validation of non-formal and informal learning activities of engineers. They are:

- *learning activities to enhance foreign language competences,*
- *learning activities to enhance digital competences,*
- *learning activities to enhance social and civic competences,*
- *and learning activities to enhance competences concerning initiative and entrepreneurship.*

The system for documenting and validating the non-technical learning activities will be described and explained in detail in section 2.2.

c.) Technical learning activities

For the documentation and validation of **technical learning activities** the project team developed its own system of categorization of learning activities. This list is based on FEANI's CPD policy as well as other documentation and validation systems and comprises most current forms of CPD for engineers that professional engineering organizations generally accept. This system for the classification of learning activities encompasses formal, non-formal and informal learning activities, offering the applicant an opportunity to present a wide range of learning activities.

- *in-company training*
- *post graduate academic*
- *external training*
- *engineering research*

⁵⁶ <https://www.coe.int/en/web/common-european-framework-reference-languages>

⁵⁷ <https://ec.europa.eu/jrc/en/digcomp/digital-competence-framework>

⁵⁸ <https://ec.europa.eu/ploteus/content/descriptors-page>

⁵⁹ CEDEFOP (2007): Key competences for lifelong learning. European Reference Framework. Luxembourg.

- *teaching or instructing*
- *service in professional engineering organization*
- *development of technical regulations, codes or norms*
- *technical visit/assignment*
- *participation in job-related conference, congress or convention*
- *preparation and presentation of technical paper*
- *preparation and publication in a profession-related publication*
- *manufacturing, production, construction*
- *technical quality control, inspection or evaluation*
- *coordination and management*

The system for documenting and validating the technical learning activities will be described and explained in detail in section 2.2.

d.) Documentation and validation of learning activities (e-portfolio)

The project team also developed a list of information that every applicant has to add for each single learning activity. This is not only the first step of the validation process; it is also part of the self-reflection of the applicants on their own achievements.

- *Starting date and conclusion date of the activity*
- *Designation of the activity*
- *Basic category of the activity (non-technical/technical)*
- *Short summary of the activity (max. 200 characters)*
- *Duration of activity (in hours)*
- *CPD points (according to FEANI CPD policy)*
- *Type of activity (field of competence)*

In addition to this information, the applicant has to add some kind of evidence of the learning activity in order to receive validation. This maybe a certificate, if the learning activity has taken place in a formalized way. However, this evidence may also be of a different kind, e.g. an electronic certificate generated from a self-learning program, a list of participants, a fair ticket, etc.

e.) Self-evaluation

Another important part of the documentation and validation of learning activities is the self-evaluation scheme. This offers the applicant the opportunity to add information on the level of competence they have achieved in the field of competence the activity is a part of.

This is a very important part, as a single learning activity in itself will only offer limited information on the applicant's knowledge, skills, and competences; by adding a self-evaluation the applicant has the opportunity to give to the reader (e.g. an HR manager) the bigger picture, thus providing vital information on the competence profile as a whole.

The self-evaluation scheme offers several options. The functionality of the self-evaluation scheme will be explained in detail in section 2.2.

2.2 The process of documentation and validation of learning activities⁶⁰

The record of the non-formal and informal learning activities and outcomes in this concept is realized in the form of an online e-portfolio. In order to come up with this e-portfolio, a process of identification, documentation, self-evaluation, and finally validation is necessary.

The following chapter describes in detail the application process of the engineering card with a special focus on the section for documentation and validation of non-formal and informal learning activities.

The application process consists of the following steps:

1. Personal data
2. Engineering education (academic)
3. Professional experience (after conclusion of education)
4. Continuing professional development (only formal – old system)
5. Continuing professional development (formal/non-formal/informal – new system)
6. Payment method
7. Summary of application and acknowledgement
8. Confirmation of application and payment

a.) Personal Data

The applicant has to enter their personal information for registration as an applicant. This data later forms the basis for the printing the card and the register excerpt. The e-mail address together with a password generated later in the process forms the login information needed by the card holder to update data on a regular basis.

The screenshot displays the '1. Persönliche Angaben' (Personal Data) step of an online application process. The interface is in German and includes a progress bar at the top with steps: 1. Persönliche Angaben, 2. Studium, 3. Berufserfahrung, 4. formale Weiterbildung, 5. non-formale/informelle Weiterbildung, 6. Zahlungsart, 7. Angaben prüfen, and 8. Zahlung. The current step is highlighted in orange.

On the left side, there is a sidebar with the following information:

- A question mark icon and the text: 'VORSCHAU DER EINZELNEN SCHRITTE'.
- The European Union flag and the text: 'Kofinanziert durch das Programm Erasmus+ der Europäischen Union'.
- A warning: 'Die Verantwortung für den Inhalt dieser Veröffentlichung trägt allein der Verfasser; die Kommission haftet nicht für die weitere Verwendung der darin enthaltenen Angaben.'
- A note: 'Hinweis: Die Zahlung für das kostenpflichtige Prüfverfahren erfolgt an den VDI e.V. Der VDI e.V. handelt für die Träger der engineerNG card.'
- The Creative Commons Attribution-NonDerivatives 4.0 International License logo and text: 'This work is licensed under a Creative Commons Attribution-NonDerivatives 4.0 International License'.

The main form area is titled 'Angaben zur Person' and contains the following fields:

- Anrede***: Radio buttons for 'Frau' and 'Herr' (selected).
- Land***: Dropdown menu set to 'Deutschland'.
- E-Mail***: Text input field containing 'mustermann.max@vdi.de'.
- Wiederholung E-Mail***: Text input field containing 'mustermann.max@vdi.de'.
- Vorname***: Text input field containing 'Max'.
- Geburtsdatum***: Date picker set to '01.01.1995' (TT.MM.JJJJ).
- Nachname***: Text input field containing 'Mustermann'.
- Geburtsort***: Text input field containing 'Musterstadt'.
- c/o**: Text input field.
- Telefonnr. (tagsüber)***: Text input field containing '01234 567890'.
- Straße/Hausnr.***: Text input field containing 'Musterstraße 1'.
- PLZ***: Text input field containing '01234'.
- Staatangehörigkeit***: Radio buttons for 'Deutsch' (selected) and 'Germany' (with a flag icon). A link '(optional - warum englisch?)' is below.
- Ort***: Text input field containing 'Musterstadt'.

Below the form, there are three upload sections:

- Passfoto hochladen*** (max. 1 Datei): Includes a photo of a man and a 'Hochladen' button. File types: (jpg, jpeg, gif, png, .bmp, max.4 MB).
- Unterschrift hochladen*** (max. 1 Datei): Includes a signature 'M. Mustermann' and a 'Hochladen' button. File types: (jpg, jpeg, gif, png, max.4 MB).
- Nachweis Mitgliedschaft hochladen***: Includes a PDF icon labeled 'muster.pdf' and a 'Hochladen' button. File types: (jpg, jpeg, gif, png, .bmp, .pdf, max.4 MB).

At the bottom right, there is a button 'weiter zum nächsten Schritt' and a legend: '* = Pflichtangabe', '** = je nach getroffener Auswahl gegebenenfalls Pflichtangabe'.

⁶⁰ This is how the process would look like, if an applicant would do their first application and enter information on education, professional experience, and further training. In reality, most applicants continually update information on professional experience and further training, as they are not a prerequisite for being granted the engineering card.

b.) Engineering education

The applicant has to enter information on their engineering education. An applicant may enter more than one data package, e.g. the applicant has first finished a bachelor degree (A1), after that a master degree (A2), and finally a PhD (A3). Only engineering programs can be accepted under this section.

The screenshot shows the '2. Studium' section of the application form. It includes a sidebar with information about the Erasmus+ program and a main form area for entering study details. The sidebar contains the European Union flag, text about funding, a disclaimer about content responsibility, and a Creative Commons license notice. The main form area has a progress bar at the top with steps: 1. Persönliche Angaben, 2. Studium (highlighted), 3. Berufserfahrung, 4. formale Weiterbildung, 5. non-formale/informelle Weiterbildung, 6. Zahlungsart, 7. Angaben prüfen, 8. Zahlung. The 'Angaben zum 1. Studium' section includes fields for 'Akademischer Grad*' (Bachelor of Engineering (B.Eng.)), 'Freitextfeld', 'Abschlussdatum*' (20, Juli, 2016), 'Studiengang**' (Maschinenbau, Mechanical Engineering), and 'Hochschule*' (Technische Universität Musterstadt). There is also a section for 'Abschlusszeugnis / Diploma-Supplement*' with a file upload button and a search button. A legend at the bottom explains the asterisks: * = Pflichtangabe, ** = je nach getroffener Auswahl gegebenenfalls Pflichtangabe.

c.) Professional experience

The screenshot shows the '3. Berufserfahrung' section of the application form. It includes a sidebar with information about the Erasmus+ program and a main form area for entering professional experience. The sidebar contains the European Union flag, text about funding, a disclaimer about content responsibility, and a Creative Commons license notice. The main form area has a progress bar at the top with steps: 1. Persönliche Angaben, 2. Studium, 3. Berufserfahrung (highlighted), 4. formale Weiterbildung, 5. non-formale/informelle Weiterbildung, 6. Zahlungsart, 7. Angaben prüfen, 8. Zahlung. The 'Angaben zur 1. Berufserfahrung' section includes a note about skipping the section, 'Zeitraum*' (September, 2016, heute), 'Bereich der beruflichen Tätigkeit*' (freie Wirtschaft), 'Arbeitgeber**' (Muster GmbH), 'Funktion*' (Projektingenieur), and 'Tätigkeiten*' (deutsche Tätigkeitsbeschreibung, optional - englische Tätigkeitsbeschreibung). There is also a section for 'Nachweisdokument*' (z.B. Arbeitsbescheinigung) with a file upload button and a search button. A legend at the bottom explains the asterisks: * = Pflichtangabe, ** = je nach getroffener Auswahl gegebenenfalls Pflichtangabe.

The applicant may enter information on the professional experience they have gathered after the conclusion of their first engineering education. This is not mandatory. Only professional experience for the period after the conclusion of the first engineering education can be accepted.

d.) Continuing Professional Development –formal

Applicants may enter further education activities that are strictly formal in nature. The applicant has to choose a category for each activity and add a certificate. The three categories are a combination of content and type of the activity. They are:

C1 – non-technical or technical; only participation

C2 – technical with a mandatory test

C3 – technical with a mandatory test and a formal certificate; engineering education a prerequisite

Only further education activities for the period after the conclusion of the first engineering education can be accepted.

VORSCHAU DER EINZELNEN SCHRITTE

Hinweis:
Die Zahlung für das kostenpflichtige Prüfverfahren erfolgt an den VDI e.V. Der VDI e.V. handelt für die Träger der engineerNG card.

1. Persönliche Angaben | **2. Studium** | **3. Berufserfahrung** | **4. formale Weiterbildung** | **5. non-formale/informelle Weiterbildung**

5. Zahlungsart | **6. Angaben prüfen** | **7. Zahlung**

Hier können Sie **formale** Weiterbildungen erfassen

Angaben zur 1. Weiterbildung
falls Sie keine Weiterbildung angeben möchten, können Sie diesen Abschnitt ohne Eingaben überspringen!

Zeitraum* 2016 2017

Weiterbildungs-Titel* (optional - warum englisch?)

Art der Weiterbildung*

Anbieter*

Nachweisdokument* (mehrere Dateien möglich)

(.jpg, .jpeg, .pdf, .png, .gif, .pdf, max. 4 MB)

oder

* = Pflichtangabe
** = je nach getroffener Auswahl gegebenenfalls Pflichtangabe

e.) Continuing Professional Development – non-formal/informal

In addition to the old system, the new engineering card database offers the opportunity to add learning activities that are non-formal or informal in nature.⁶¹ This adds the possibility for applicants to provide via the register excerpt others (e.g. HR managers) with a complete picture of their own competence development after basic education.

As mentioned earlier in this document, the applicant may enter non-technical learning activities from

VORSCHAU DER EINZELNEN SCHRITTE

1. Persönliche Angaben | **2. Studium** | **3. Berufserfahrung** | **4. formale Weiterbildung** | **5. non-formale/informelle Weiterbildung**

6. Zahlungsart | **7. Angaben prüfen** | **8. Zahlung**

Hier können Sie **non-formale/informelle** Weiterbildungen erfassen

Angaben zur 4. non-formalen/informellen Weiterbildung
falls Sie keine non-formale/informelle Weiterbildung angeben möchten, können Sie diesen Abschnitt ohne Eingaben überspringen!

Zeitraum* 2016 2017

Bezeichnung* (optional - warum englisch?)

Grundstufen*

Kurzbeschreibung*

Dauer der Aktivität (in Stunden)

CPD Punkte lt. FEANI CPD Policy

Lernaktivitäten mit nicht-technischem Inhalt*

Selbsteinstufung nach EU Referenzrahmen Sprachen* (Erklärung)

Nachweisdokument* (mehrere Dateien möglich)

(.jpg, .jpeg, .pdf, .png, .gif, .pdf, max. 4 MB)

Hier können Sie **non-formale/informelle** Weiterbildungen erfassen

Angaben zur 2. non-formalen/informellen Weiterbildung
falls Sie keine non-formale/informelle Weiterbildung angeben möchten, können Sie diesen Abschnitt ohne Eingaben überspringen!

Zeitraum* 2017 2017

Bezeichnung* (optional - warum englisch?)

Grundstufen*

Kurzbeschreibung*

Dauer der Aktivität (in Stunden)

CPD Punkte lt. FEANI CPD Policy

Lernaktivitäten mit technischem Inhalt*

Selbsteinstufung in diesem Kompetenzfeld* (Erklärung)

Nachweisdokument* (mehrere Dateien möglich)

(.jpg, .jpeg, .pdf, .png, .gif, .pdf, max. 4 MB)

oder

* = Pflichtangabe
** = je nach getroffener Auswahl gegebenenfalls Pflichtangabe

the following areas:

- foreign language competences
- digital competences
- social and civic competences
- entrepreneurial competences

The applicant may also, under the category “other”, add learning activities that do not fit into one of those categories. After choosing the field of competence, the applicant has to enter additional information on the learning activity as well as provide a document in order to allow for validation of the learning activity.

The final step for the applicant is to do a self-evaluation of their overall competences in the field of the learning activity.

⁶¹ For the definition on “non-formal” and “informal” please see page 5 of this concept.

For **languages**, the self-evaluation is based on the European Reference Framework for languages (see figure).

PROFICIENT USER	C2	Can understand with ease virtually everything heard or read. Can summarise information from different spoken and written sources, reconstructing arguments and accounts in a coherent presentation. Can express him/herself spontaneously, very fluently and precisely, differentiating finer shades of meaning even in more complex situations.
	C1	Can understand a wide range of demanding, longer texts, and recognise implicit meaning. Can express him/herself fluently and spontaneously without much obvious searching for expressions. Can use language flexibly and effectively for social, academic and professional purposes. Can produce clear, well-structured, detailed text on complex subjects, showing controlled use of organisational patterns, connectors and cohesive devices.
INDEPENDENT USER	B2	Can understand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialisation. Can interact with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible without strain for either party. Can produce clear, detailed text on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options.
	B1	Can understand the main points of clear standard input on familiar matters regularly encountered in work, school, leisure, etc. Can deal with most situations likely to arise whilst travelling in an area where the language is spoken. Can produce simple connected text on topics which are familiar or of personal interest. Can describe experiences and events, dreams, hopes & ambitions and briefly give reasons and explanations for opinions and plans.
BASIC USER	A2	Can understand sentences and frequently used expressions related to areas of most immediate relevance (e.g. very basic personal and family information, shopping, local geography, employment). Can communicate in simple and routine tasks requiring a simple and direct exchange of information on familiar and routine matters. Can describe in simple terms aspects of his/her background, immediate environment and matters in areas of immediate need.
	A1	Can understand and use familiar everyday expressions and very basic phrases aimed at the satisfaction of needs of a concrete type. Can introduce him/herself and others and can ask and answer questions about personal details such as where he/she lives, people he/she knows and things he/she has. Can interact in a simple way provided the other person talks slowly and clearly and is prepared to help.

<https://www.coe.int/en/web/common-european-framework-reference-languages/table-1-cefr-3.3-common-reference-levels-global-scale>

For **digital competences**, the self-evaluation is based on DIGCOMP, the European Reference Framework for Digital Competences. Here, the applicant first has to choose from one of five categories in which the activity may fall and then select a proficiency level based on the given descriptors.⁶²

For learning activities that fall under the categories “**social and civic**”, “**entrepreneurial**” or “**others**” so far no reference framework is available. Therefore, the project team has decided to resort to the European Qualification Framework (EQF). It offers eight levels of proficiency.⁶³

For the engineer, of course, continuing professional development in the technical field is of the utmost importance. However, does not necessarily take place in a formalised way, but may also be non-formal and informal in nature.

⁶² <http://ftp.jrc.es/EURdoc/JRC83167.pdf>

⁶³ <https://ec.europa.eu/ploteus/content/descriptors-page>

The engineering card in its revised version offers the applicant the opportunity to add **technical learning activities** that are non-formal or informal in nature. Each learning activity has to be categorised by using the following scheme and evaluated by using the proficiency scale below:

- a) in-company training
- b) external training
- c) post graduate academic
- d) engineering research
- e) teaching or instructing
- f) service in professional engineering organization
- g) development of technical regulations, codes or norms
- h) technical visit/assignment
- i) participation in job-related conference, congress or convention
- j) preparation and presentation of technical paper
- k) preparation and publication in a profession-related publication
- l) manufacturing, production, construction
- m) technical quality control, inspection or evaluation
- n) coordination and management

Score	Proficiency Level	Description
N/A	Not Applicable	You are not required to apply or demonstrate this competency.
1	Fundamental Awareness	One has a common proficiency of basic techniques and concepts of the engineering competency. <ul style="list-style-type: none"> Focus is on learning and knowledge of engineering.
2	Novice	One has the level of competency gained in a classroom and/or laboratory scenarios or as a trainee on-the-job. One is expected to need help when performing this engineering competency. <ul style="list-style-type: none"> Focus is on developing through on-the-job experience; One understands and can discuss terminology, concepts, principles, and issues related to this competency; One utilizes the full range of reference and resource materials in this competency.
3	Intermediate	One is able to successfully complete tasks in this competency as requested. Help from an expert may be required from time to time, but one can usually perform this competency independently. <ul style="list-style-type: none"> Focus is on applying and enhancing knowledge or skill or attitude; One has applied this competency to situations occasionally while needing minimal guidance to perform successfully; One understands and can discuss the application and implications of changes to processes, policies, and procedures in this area.
4	Advanced	One can perform the actions associated with this competency without assistance. One is recognized as "a person to ask" when difficult questions arise regarding this competency. <ul style="list-style-type: none"> Focus is on broad organizational/professional issues; One has consistently provided practical/relevant ideas and perspectives on process or practice improvements which may easily be implemented; One is capable of coaching others in the application of this competency by translating complex nuances relating to this competency into easy to understand terms; One participates in senior level discussions regarding this competency; One assists in the development of reference and resource materials in this competency.
5	Expert	One is known as an expert in this area. One can provide guidance, troubleshoot and answer questions related to this area of expertise and the field where this competency is used. <ul style="list-style-type: none"> Focus is strategic; One has demonstrated consistent excellence in applying this competency across multiple projects and/or organizations; One is considered the "go to" person in this area within related organizations; One creates new applications for and/or leads the development of reference and resource materials for this competency; One is able to diagram or to explain the relevant process elements and issues in relation to organizational issues and trends in sufficient detail during discussions and presentations, to foster a greater understanding among colleagues and constituents.

f.) Payment method

After entering all information on education, professional experience, and further training, the applicant may choose the payment method. They three available options are: credit card, invoice/bank transfer, and voucher.

g.) Summary of application and acknowledgment

VORSCHAU DER EINZELNEN SCHRITTE

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Die Verantwortung für den Inhalt dieser Veröffentlichung trägt allein der Verfasser; die Kommission haftet nicht für die weitere Verwendung der darin enthaltenen Angaben.

Hinweis: Die Zahlung für das kostenpflichtige Prüfverfahren erfolgt an den VDI e.V. Der VDI e.V. handelt für die Träger der engineerING card.

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1. Persönliche Angaben 2. Studium 3. Berufserfahrung 4. formale Weiterbildung 5. non-formale/informelle Weiterbildung

6. Zahlungsart 7. Angaben prüfen 8. Zahlung

Angaben zur Person vom 25.10.2017

Daten korrigieren

Anrede Herr

Titel

Vorname Max

Nachname Mustermann

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Staatsangehörigkeit Deutsch Germany

Passfoto

Unterschrift

Verbandszugehörigkeit Verein Deutscher Ingenieure e.V.

Verbandschweisedokument(e) [vdiStk.pdf](#)

Angaben zur Zahlung vom 25.10.2017

Daten korrigieren

Zahlweise per Rechnung

Gesamtpreis

Preis für erstmaligen Kartenantrag: 94,99 - €

Gesamtpreis: 94,99 - €

Wie sind Sie auf die engineerING card aufmerksam geworden?

oder Sonstiges:

Ich versichere, dass sämtliche Angaben in diesem Antrag richtig sind. Ich versichere weiter, dass die eingereichten Unterlagen richtig sind und insbesondere mit den Originalurkunden identisch sind.

Die [Ethischen Grundsätze](#) (PDF in neuem Fenster) des Ingenieursberufs erkenne ich an.

Ich nehme zur Kenntnis, dass mit der Beantragung der engineerING card Kosten für die Prüfung der Mindestvoraussetzungen verbunden sind. Diese Prüfkosten (s.o.) fallen unabhängig vom Ausgang des Prüfverfahrens an.

[Daten senden und weiter zur Zahlung](#)

In the final step, the applicant has the opportunity to check again all information entered and is asked to accept the terms and conditions.

h.) Confirmation of application and payment

The final step confirms the payment and informs the applicant on the further steps concerning payment. The application is transferred into the database for formal evaluation by the engineering card office. The application process is complete.

VORSCHAU DER EINZELNEN SCHRITTE

Kofinanziert durch das Programm Erasmus+ der Europäischen Union

Die Verantwortung für den Inhalt dieser Veröffentlichung trägt allein der Verfasser; die Kommission haftet nicht für die weitere Verwendung der darin enthaltenen Angaben.

Hinweis: Die Zahlung für das kostenpflichtige Prüfverfahren erfolgt an den VDI e.V. Der VDI e.V. handelt für die Träger der engineerING card.

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Notice: Undefined variable: arrDaten in /home/www/sites/194.245.72.80/site/professionalcard/gui/index.php on line 5703

Notice: Undefined index: in /home/www/sites/194.245.72.80/site/professionalcard/gui/index.php on line 5703

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Karte erfolgreich beantragt

Vielen Dank. Wir haben Ihren Antrag erhalten und Ihnen zur Kontrolle eine E-Mail mit Ihren Angaben an Ihre E-Mailadresse "kiefer@vdi.de" gesendet.

Da Sie als Zahlweise "per Rechnung" gewählt haben, warten Sie mit der Bezahlung bitte, bis wir Ihnen eine Rechnung zugesendet haben. Nach Begleichung der Rechnung durch Überweisung und Geldeingang werden wir mit der Prüfung bzw. Bearbeitung beginnen.

Falls Sie noch Fragen haben, nehmen Sie bitte Kontakt mit uns auf unter VDI e.V., <http://www.engineering-card.de/index.php?id=2736>. Für Rückfragen stehen wir Ihnen gerne zur Verfügung.

Mit freundlichen Grüßen

Ihre Geschäftsstelle engineerING card

Verein Deutscher Ingenieure e.V.
VDI-Platz 1
40468 Düsseldorf
Telefon: [+49 211 62 14 149](tel:+492116214149)
E-Mail: info@engineering-card.de

3. Lessons learned – main challenges in the creation of a documentation and validation system

During the lifetime of this project, the project team had to deal with several challenges. The following is a short summary of the main obstacles. Additionally, the project team wants to make some suggestions on how to overcome those challenges.

a.) Documenting and referencing competences

When the project started, the project partners had the idea to create a system for the documentation and validation of technical and non-technical competences of engineers. During the first months of the project, after a phase of intensive desk research on existing documentation and validation systems and methods and careful considerations, the project team decided to reduce the scope of the project to the development of a system for the documentation and validation of non-formal and informal learning activities of engineers. This is a document-based approach, i.e. while the learning activity or the learning process as a whole (as it may consist of several activities) itself may be non-formal or informal in nature, the documentation and validation process is a formalized one.

The main reason, why a competence-based approach proofed to be unrealistic, is the lack so far of a reference framework for engineering competences based on learning outcomes. A reference framework is important for several reasons:

1. it offers the applicant a matrix to do a self-evaluation as part of the documentation process,
2. provides the validator with a generally accepted classification and evaluation system and
3. creates transparency thus
4. increasing the credibility of the assessment.

There have been several approaches to create such a reference framework, e.g. EUR-ACE, Euro-records, etc. However, the heterogeneity of the engineering education in Europe and the complexity of engineering as a profession comprising many different fields of specialization have so far made it impossible to create such a framework.

In addition, there is no consensus, so far, on the European level concerning the competences an engineer must have in order to be able to work.

However, the system for documentation and validation of non-formal and informal learning activities of engineers as presented by this concept could be easily enhanced. It would then become a system to document and validate competences (the learning outcome) instead of the competence acquirement (the learning activity). Until a generally accepted reference framework is in place, however, the process will have to be limited to the creation of an e-portfolio with a documentation and document-based validation of non-technical as well as technical learning activities combined with a self-evaluation of the activity by the applicant.

b.) Validating competences

The second challenge, the project team faced when working on the competence-based approach, was validation. While the validation of formal learning is quite easy, as in most cases, there is a formal certification involved, non-formal and informal learning do not necessarily lead to certification. In those cases, the validation of competences makes different approaches necessary that are quite complex, e.g. interviews, analysis of sample work, standardised tests, and other elaborate forms of validation. The chapter on the approach towards non-formal and informal learning in Austria shows, how elaborate mechanisms to document and validate learning outcomes/competences have to be and how resource-intensive their use is.

Here again, the prerequisite is a reference framework in order to reference an applicant's knowledge, skills, and competences against defined criteria, thus allowing a reliable statement concerning the level of proficiency of a person in the field of competence (see above). In order to be reliable, the testing has to be done by experts, so a comprehensive system to document and validate non-formal and informally acquired learning outcomes requires a joint effort of organisations/institutions from many different areas of expertise.

For the reasons given above, the project team decided to resort to a rather simple document-based validation, i.e. the applicant has to provide some type of document to validate the learning activity. This still offers the applicant to enter a wide variety of learning activities, as even informal learning, e.g. visiting a fair, doing online learning, being in charge of a project at work, in many cases produces some type of certification.

4. Glossary⁶⁴

This glossary defines specific terms used in European education and training policy in general and in this project concept in specific. The terminology and definitions have been gathered from different sources. Some of them have been adapted for this specific context by the experts included in this project.

Term	Definition
CEDEFOP	The European Centre for the Development of Vocational Training (CEDEFOP) is one of the EU's decentralized agencies supporting development of European vocational education and training (VET) policies and contributes to their implementation.
Certificate	An official document that records achievements of an individual/organization following assessment against predefined criteria. It is issued by an awarding body.
Competence	Competence is the ability to use knowledge and skills to fulfill a given task or solve a given problem.
Continuing Professional Development (CPD)	Any action undertaken to improve professional performance by enhancing or increasing knowledge, skills, and competences in the field of a person's profession.
engineerING card	The engineering card is a professional card issued by several engineering organisations in Europe under the umbrella of FEANI, the European Federation of national engineering associations. It is a tool that was developed to increase transparency and facilitate mobility on the European labor market.
e-portfolio	An e-portfolio is an electronic collection of information on a single person, e.g. a collection of all further education activities of a person. The idea of the portfolio in this case is to allow for a comprehensive presentation of a person's competences.

⁶⁴ The glossary is not comprehensive, but includes terms that are relevant in this concept. For more definitions, please refer to other sources, e.g. CEDEFOP (2008): Terminology of European education and training policy. A selection of 100 key terms. Luxembourg.

EUROPASS	Portfolio helping citizens to better communicate their skills and qualifications when applying for job or study in Europe. The Europass CV and the language passport are completed by citizens themselves; the other documents can be issued to citizens who achieve a mobility experience in another European country (europass mobility) or who complete a formal program of vocational education or training (certificate supplement) or of higher education (diploma supplement).
European credit transfer system (ECTS)	A systematic way of describing a higher education program by attaching credits to its components (modules, courses, placements, dissertation work, etc.). The main goal is an increase in transparency and mobility on the Higher Education market.
European Higher Education Area (EHEA)	The European Higher Education Area (EHEA) is the area defined by the Bologna-Declaration. It includes not only the European Union, but entire Europe-
European Qualification Framework (EQF)	The European Qualifications Framework acts as a translation device to make national qualifications more transparent and comparable across Europe. The EQF aims on relating different countries' national qualification systems to a common European reference framework.
European qualifications framework (EQF) for lifelong learning (LLL)	The EQF-LLL is a reference tool for describing and comparing qualification levels in qualifications systems developed at national, international or sectoral levels.
Evaluation	Procedure of systematic determination of a person's achievement or value in regard to predefined criteria
Formal learning activity	Learning organized and guided by a formal curriculum in an organized and structured environment. The learning is explicitly designated as a learning process leading to formal certification.
Higher Education Institution (HEI)	Higher Education Institutions offer post-secondary education or third level education. They are therefore part of the formal learning system.

Informal learning	Informal learning is not organized or structured in terms of objectives, time or learning support. Informal learning is in most cases unintentional from the learner's perspective.
Knowledge	Knowledge is the sum factual information a person possesses. Expert knowledge is knowledge in a specific area.
Learning outcomes / learning attainments	Statements of knowledge, skills and/or competences an individual has acquired and/or is able to demonstrate after completion of a learning process. Learning outcomes are often defined using descriptors.
Mobility	Ability of an individual to move and adapt to a new occupational or educational environment.
National Qualification Framework (NQF)	The National Qualification Framework is the result of implementation of the European Qualification Framework (EQF) on the national level. Each country references the different levels of the national education system to the levels of the EQF in order to create comparability between the various national systems.
Non-formal learning	Non-formal learning is learning 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.
Non-technical learning activities	Non-technical learning activities are non-technical in content. They are not directly linked to the engineering profession and may be interdisciplinary. Typical non-technical learning activities are language learning or project management.
Skill	Ability to apply knowledge to complete tasks and solve problems.
Technical learning activities	Technical learning activities are technical in content. They are directly relevant to the engineer as they are part of the expert knowledge of the engineer.
Validation	Act of confirming that the information given is correct by checking them against pre-defined criteria.

5. Literature

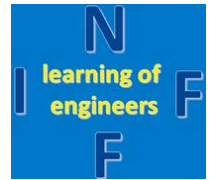
The literature used in this project is available [here](#) using the following login information:

Username: **vdi\projekt.erasmusplus**

Password: **PE_10000**



Kofinanziert durch das
Programm Erasmus+
der Europäischen Union



Sehr geehrte Damen und Herren,

der Zugang zur Testversion der Antragsmaske ist über den folgenden Weblink zu erreichen:

<http://194.245.72.80/pc/gui/index.php>

Aus Sicherheitsgründen ist er durch ein Passwort geschützt, da im Gegensatz zur Live-Version die Testversion nicht durch ein SSL-Zertifikat geschützt wird. Die Funktionalität der Testversion ist dadurch nicht verringert.

Der Testzugang kann unter Verwendung der folgenden Login Daten verwendet werden:

Benutzername: **engineeringcard**

Passwort: **formularupdate##17**

Sollten Sie Probleme beim Zugang zur Testversion haben, kontaktieren Sie mich gerne.

Mit freundlichen Grüßen

Thomas Kiefer

Projektleiter

--

Dr. Thomas Kiefer

Bereich Beruf & Gesellschaft

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THE ENGINEERING CARD
- **The Professional Card for Engineers –**

DRAFT
Handbook on Managing the
Administration of the Engineering Card
(hereinafter referred to as the “Handbook”)

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1. PREFACE

The rules defined in Directive 2005/36/EC on the recognition of professional qualifications were not adapted to the needs of an evolving labor market, where the mobility of professionals across the EU is essential to respond to labor shortages in key sectors of the economy. As FEANI - the largest European Federation of National Engineering Associations - we have noted with satisfaction the amendment of Directive 2005/36/EC by Directive 2013/55/EC which was published in late 2013. This amended Directive now includes the concept of the European Professional Card of which the administrative management is carried out by the respective National Competent Authorities (following the Regulation to Administrative Cooperation through the Internal Market Information System or IMI).

In the period 2011-2013, FEANI played an active role in the EU Commission's Steering Group which developed the concept of this European Professional Card. It gave us the opportunity to introduce our concept of the "EngineerING Card" as an example of how such a Professional Card for engineers could look like. Nevertheless, ultimately the EU's concept of a Professional Card turns out to be an electronic certificate issued and delivered by the respective national competent authority. Whereas we as FEANI are in full support of the EU's initiative, our commitment to go ahead with the European Professional Card for the Engineering profession is still subject to the degree of alignment we will be able to ensure with our Engineering Card concept : the principles, prerequisites, conditions and lay-out of the latter are described in the attached Handbook. We are confident that our members - at present, but also in the years to come - are prepared to continue working together with the respective competent authorities and other stakeholders, to help defining the criteria upon which such an EU Professional Card for Engineers can be issued.

Both concepts of EPC and Eng Card in the end aim to facilitate mobility and to replace long and complex recognition procedures. At present, we are curious to learn if the EPC issued for other professions than engineering, enables those professionals to indeed react more quickly to job opportunities in other Member States. In addition, our FEANI-members are national Professional Organizations who have the expertise, competence and knowledge available to help engineering professionals seeking recognition of their professional qualifications in another EU Member State. With our experience, we will be able to provide feedback and input to the EU in the future. With the Eng Card at hand, it is expected that individual engineers as well as their future employers in industry, will experience it as a practical hands-on tool which provides information on the cardholder's academic and professional qualifications. Engineers, qualified in one Member State and wishing to work in another Member State, will have their qualifications recognized by their future employer in a more pragmatic and faster way. For the cardholder the Eng Card will simplify the administrative requirements and reduce the deadlines for obtaining the recognition of qualifications. For employers, it will improve direct access to reliable individual information.

Within FEANI the first 500 cards have meanwhile been issued and more countries are signing up to this concept. By the increase of the number of cards and the accumulation of the experiences gained with it, we will – in the following years - be able to make a difference in mobilizing the engineering capacity in Europe.

Dirk G. BOCHAR
FEANI Secretary General

2. OBJECT OF THE HANDBOOK

The following requirements and procedural principals regulate the decision-making process regarding the approval of the Engineering Card and the acceptance into the National Engineering Register. At the same time, they serve as a transparent orientation guide for applicants to estimate the likelihood of their success while applying and understanding the decision-making process.

3. GENERAL STANDARDS

1. Introduction

The Engineering Card is a professional card which is applied for voluntarily and of which the associated record can be retrieved in the National Engineering Register. The card shall be a standardized and recognised format approved by FEANI for the documentatin of relevant qualifications for the engineering profession. The National Register Committee recommends on the admission to the National Engineering Register and subsequently the FEANI National Preferred Partner shall officially issue the card. The present Guidelines shall serve the National Register Committee as a basis for its decision-making. It gives guidance for approval of the Engineering Card and the acceptance into the National Engineering Register.

2. Governance and Procedures of the FEANI National Preferred Partner (*)

The decisions required to admit an applicant to the National Engineering Register and hence award a professional card shall be made by the FEANI National Preferred Partner on the binding recommendation of its National Register Committee. The latter must be established and composed by the FEANI National Preferred Partner and shall consist of competent persons with representation from academia and industry.

The National Register Committee's terms of reference shall include suitable articles covering, inter alia, quorum, substitution and turnover of members.

There shall be procedures by which appeal against a decision made by the National Register Committee is heard by a panel which is independent of the National Register Committee.

(*) Because FEANI is the European umbrella Organisation of National Engineering Associations, the term "FEANI National Member" was deliberately not chosen to be used in the attached Handbook. It is by definition not clear in advance which National Engineering Association will be issuing the Engineering Card. In principle, the "National Preferred Partner" will be the National Member of FEANI or the Organization delegated by the National Member of FEANI. In countries where there is only one National Engineering Association which is member of FEANI (such as in Portugal or Ireland) there is no doubt who will issue the card. In addition, those FEANI members are often also the recognized Competent Authority in their country. In other FEANI-countries, however, there are often more National Engineering Associations who together compose and represent the FEANI National Member. This is the case for Norway (NITO and TEKNA), Germany (VDE and VDI), Belgium, Switzerland, etc. This means that in those countries, the Engineering Association which ultimately issues the card is legally not - in a direct way - the FEANI National Member, but merely a part of it. Whichever National Engineering Association it will then be, remains to be seen and determined at national level. For this reason the term "FEANI National Preferred Partner" seemed with regard to the national entity issuing the EngineerrING card, the more correct term to use.

The National Register Committee may delegate suitable tasks to members of staff but shall monitor such delegation. All decisions involving matters of judgement shall only be made by the National Register Committee.

The FEANI National Preferred Partner shall maintain records of application processing and minutes of National Register Committee meetings.

For further details concerning the monitoring of the governance, procedures and performance of the National Register Committee, reference is made to Clause 4 of this Handbook.

For further details concerning the proposed Internal Regulations of the National Register Committee, reference is made to Clause 8 of this Handbook.

3. Provision of Professional Card Data

The FEANI National Preferred Partner shall ensure that the scope and form of the validated information held in the National Engineering Register and displayed on the professional card shall be in accordance with FEANI requirements as outlined and detailed in the Handbook.

4. Validity

The FEANI National Preferred Partner shall limit validity to 10 years (provided the holder remains in good standing) and shall immediately withdraw any card which it finds was issued on the basis of false evidence.

4. GUIDELINES FOR THE NATIONAL REGISTER COMMITTEE

1. Criteria for the National Register Committee to award a professional card

The National Register Committee shall have the procedures, staff and resources which enable it to be certain:

- of the identity of the applicant;
- that the applicant holds the qualification claimed;
- that the qualification is identified as (is equivalent to) a First, Second or Third Cycle degree;
- that the applicant has undertaken the work experience, training or Continuous Professional Development (CPD) claimed.

2. Application

Application for the *Engineering Card* may only be made electronically, whereby all required evidence must be attached as electronic documents. In order to avoid misuse and fraud, the applicant must submit a statutory declaration that:

- All data are correct and complete.
- The documents submitted correspond to the original documents.
In countries where self-certification and electronic authentication of documents are in force, the above mentioned applications, and relevant enclosures, may be sent by certified mail and digital signature. The affidavit is not necessary in these cases.

3. Requirements for awarding the *Engineering Card* and acceptance into the National Engineering Register

The requirement for the qualified approval of the *Engineering Card* is a successful completion of a standard degree programme in engineering at a national university recognised by the state. The applicant must be entitled to carry the title “engineer” according to the regulations or laws of the country where the card is applied for.

Standard degree programmes in engineering at national universities are:

- Academic degree programmes at universities (universities, universities of technology, Higher Education Institutions of Technology, comprehensive institutions) with the degrees (e.g. in Germany : Dipl.-Ing., Dipl.-Ing. univ.).
- Academic degree programmes at universities of applied sciences, with the degrees (e.g. in Germany : Dipl.-Ing., Dipl.-Ing.).
- Bachelor’s degree programmes at universities and universities of applied sciences with the degrees B.Eng. and B.Sc.

4. Classification of Degree Programmes in Engineering

The classification of degree programmes in engineering (A) is oriented on the new European Higher Education System (Bologna System). It contains three categories corresponding to the three cycles of this system:

- A1** Corresponding to the First Cycle Degree (FCD)
- A2** Corresponding to the Second Cycle (SCD)
- A3** Corresponding to the Third Cycle Degree (TCD)

Degrees from old degree programmes are classified according to the three cycles. Therefore, the classification for the national higher education system is :

- A1** Bachelor’s degree programmes in engineering at universities and universities of applied sciences with the degrees B.Eng. and B.Sc.

Academic degree programmes in engineering at universities of applied sciences and comprehensive universities with the degrees (e.g. in Germany: Dipl.-Ing., Dipl.-Ing.).

A2 Consecutive Master's degree programmes in engineering at universities and universities of applied sciences with the degrees M.Eng. and M.Sc.

Academic degree programmes in engineering programmes at universities (universities, universities of technology, Higher Education Institutions of Technology, comprehensive institutions with the degrees Dipl.-Ing., Dipl.-Ing. univ.

A3 Doctoral studies leading to Dr.-Ing., PhD, EngD, etc.

5. Recognition of Degree Programmes

In order to facilitate the recognition procedure, a national list of accepted degree programmes in engineering, issued by the appropriate governmental authorities, shall be used by the National Register Committee. The National Register Committee has to decide whether these degree programmes are in line with the descriptors of the EUR-ACE Framework Standards and/or the FEANI-INDEX-criteria. These degree programmes are automatically considered when reviewing the application. In other cases, the degree programmes are submitted individually to the National Register Committee for review.

A recognized degree programme generally comprises levels 6, 7 and 8 of the EQF (European Qualifications Framework). In any case however, a degree with less than 180 ECTS cannot be accepted. A degree programme is recognised if its learning outcome is in accordance with the descriptors of EUR-ACE® Framework Standards or it meets the content- and subject-related requirements for a degree programme in engineering, as defined by the FEANI INDEX-criteria.

An indication of the name of the University is mandatory at least in the Register and preferably also on the Card.

The following documents should form the basis for decision-making:

1. Final Diploma (s)
2. Diploma Supplement (voluntary)
3. Transcript of Records (voluntary)
4. Curricular Record (voluntary)
5. Published Accreditation Reports (voluntary)

The general rule is that applications for an *Engineering Card* are normally submitted in the country where the respective engineering studies have been completed.

In individual cases foreign degree programmes may also be accredited, provided:

- At least one completion of a degree programme in engineering has taken place at a university recognised by a European state or
- An essential part of the professional experience was acquired in the country where the card is being applied for, or

- If the country in question does not issue an *Engineering Card*.

The recognition of foreign degree programmes takes place in principle by a case-by-case review carried out by the National Register Committee according to the criteria established in item 4 above.

There are, however, three possible exceptions :

1. If the applicant has completed his/her engineering studies in several European countries, then the person can choose in which of those countries to apply.
2. If the applicant has acquired an essential part of his/her engineer experience in a European country x, the person can apply also in country x although studies were completed in European country y.
3. If a European country where the applicant has completed his studies does not issue an *Engineering Card*, he can also apply in any other country, if applicable preferably where he resides or has his professional domiciles. The respective country is free to decide on acceptance and fee.

All of the above concerns European countries.

6. Recognition of Professional Experience

Professional experience (“B”) is not a requirement for the attainment of the *Engineering Card*. Graduates without professional experience may obtain the *Engineering Card*. Requirement for the documentation of category B, however, is the successful assignment to Category A.

Category Professional Experience B serves to document professional experience as engineer. Here, the table for engineering functions of FEANI is applied as reference for the recognition of professional experience. The National Register Committee will develop this list based on reference cases. Applicants must submit a job reference from the employer and, where applicable, a certificate.

There are three categories:

- B1** Employed in private/public companies
- B2** Employed in public service
- B3** Self-employed

The National Register Committee decides on the assignment to B1 through B3 based on the documents submitted by the applicant.

Requirement for the assignment of B1, B2 or B3 on the *Engineering Card* is the proof of at least two years of accumulated professional experience in any of the categories.

7. Recognition of Continuous Professional Development (CPD)

Continuing education is not a prerequisite for obtaining the Engineering Card, but can be documented. Training can cover both subject-specific and interdisciplinary and multi-disciplinary topics. All professional and supra-professional qualifications for the maintenance and further development of engineering or non-engineering competence are recognised as Continuous Professional Development.

The engineering card system offers a system to document formal as well as informal or non-formal learning activities. The applicants themselves may choose the type of training activity they have taken and add information and evidence (if applicable).

Only continuing education activities which have been completed after the recognised A1 degree are taken into consideration.

The CPD activities may be of a technical or a non-technical nature.

The types of technical learning activities recognized for the Engineering Card are nine categories:

- a.) In-company training courses and lectures
- b.) Formal post- graduate academic courses
- c.) External training courses
- d.) Service in professional Engineering organization activities
- e.) Technical visits and assignments
- f.) Updating professional development based in individual study
- g.) Preparation and presentation of technical paper in a conference
- h.) Preparation and technical publication in a journal or a book related with the profession
- i.) Teaching or instructing in CPD related activities with the profession

An engineer should provide on a regular basis their record of CPD to the engineering card offices by updating their information in the database. Providing the information about the CPD activities can be done at any time, however it is recommended that it is sent in only after an activity has been fully completed. The information the applicants have to provide are:

- Name and contacts
- National Engineering Association member
- For each type of the CPD activities accepted it should have a description of the CPD activity with the following information:
 - date/duration of the CPD activity (month/year)
 - name of CPD activity
 - short description of CPD activity
 - duration of the activity in hours
 - supporting documents of the CPD activity

Engineers should plan their CPD activities preferably in accordance with the identification of competencies required or recommended in a related qualification or job profile. This choice of the competencies required can be based on the engineer's self-assessment against criteria, rubrics or elements within the set of competences required.

The value of hours per each type is established by the FEANI CPD Policy. It is up to the engineer to gather as many hours of training as possible.

Type of CPD	Maximum values of hours	Comments
1. In-company training courses or lectures	No limit*	Taken in a lecture room or in a virtual environment.
2. Formal post graduate academic courses	No limit*	All such activities will involve some form of assessment.
3. External training courses	No limit*	Recognized institution or training provider.
4. Service in professional Engineering organization activities	Limit of 15 hours in average per year	May include serving in a volunteer capacity on boards and committees; being a member on higher education accreditation visits; assisting with CPD audits; mentoring a colleague for work experience purposes; contributions to participation in technical standards.
5. Technical visits or external assignments	Limit of 5 hours in average per year	Must be able to demonstrate how it has extended knowledge and skills related with the profession.
6. Updating professional development based in individual study	Limit of 5 hours in average per year	For any learning activity undertaken it is necessary to demonstrate how it has extended knowledge and skills related with the profession.
7. Preparation and presentation of a technical paper in a conference	Limit of 10 hours in average per year	Papers subject to critical peer review prior to publication.
8. Preparation and technical publication in a journal or a book	Limit of 20 hours in average per year	Publication must be related with the profession
9. Teaching or instructing in CPD related activities with the profession	Limit of 15 hours in average per year	This type is not considered for engineers that are members of higher education or research institutions
* Maximum sum of hours of 1., 2. and 3. is 25 in average per year		

Dependent of the amount of CPD taken annually, the categories indicated in the Engineering Card are:

- C1** Engineer with less than 20 hours of CPD annually
- C2** Engineer with 20 to 40 hours of CPD annually
- C3** Engineer with more than 40 hours of CPD annually

Requirement for the documentation of C1, C2 or C3 is satisfied by updating the database.

In addition to technical learning activities, applicants may also enter **non-technical learning activities**. The categories available are based on the European Competence Framework for Lifelong Learning¹. They comprise:

- foreign languages
- digital
- social and civic
- entrepreneurial
- others

The documentation of the learning activities is done in the same way as with the technical learning activities. However, the self-evaluation here is based on different European competence frameworks. For fields of competence, in which a specific competence framework is not (yet) available, the self-evaluation is based on the European Qualifications Framework (EQF).

8. Validity

The validity of the *Engineering Card* has a fixed term of 10 years, starting each time from the date of issue. However, the corresponding record in the database constituting the National Engineering Register may be updated with new titles (academic, professional and CPD) in the meanwhile awarded to the applicants. The number on the card will be a personal number and not a generic card number, to facilitate renewal when required. Up-dates of the card can happen at any time when a cardholder's criteria have changed. The card will not be issued free of charge.

9. Language

The card may have two languages when being issued: one must be English.

10. Exclusion and Deletion from the Register

If it should become apparent that an applicant or holder has provided wrong information, or has knowingly violated the ethical principles of the engineering profession, the National Register Committee reserves the right to have the person in question deleted from the Register. In this case, the access to the record of this person will be denied and all data will be deleted. If the professional card is still valid, either it must be returned or the applicant must provide proof that it has been destroyed.

¹ Office for Official Publications of the European Communities (2007): Key Competences for Lifelong Learning – A European Framework. Luxembourg.

5. QUALITY ASSURANCE PROCEDURES

In order for a FEANI National Preferred Partner to be able to award the Engineering Card in compliance with the Handbook, it should have established a National Register Committee which is endorsed by FEANI (see Clause 3 of this Handbook). Those National Register Committees are endorsed and monitored by FEANI according to the rules as outlined in this Clause 5. If a National Register Committee is no longer endorsed by FEANI, the FEANI National Preferred Partner is automatically denied the right to award the Engineering Card.

1. Monitoring Panels

FEANI shall appoint monitoring panels of competent persons to examine the governance, procedures and performance of each National Register Committee applying, through the FEANI National Preferred Partner, for endorsement of its national system and hence the ability to award the *Engineering Card*.

Annually, three persons shall be appointed by FEANI's European Monitoring Committee (**EMC**) to form an Overall Monitoring Panel (**OMP**). The Chair of EMC shall designate one of these persons to be Chair of the Panel.

OMP shall appoint Monitoring Panels (**MP**) consisting of at least two persons, to examine each National Register Committee. For each MP, the Chair of OMP shall appoint one person to act as Convenor. Monitoring Panels should embody a range of expertise and normally should include at least one academic and one person with recent industrial experience.

OMP, assisted by the FEANI Secretariat, shall take reasonable steps to ensure that none of the individuals appointed to a MP has had any substantial prior involvement in or continuing commitment to the National Register Committee being examined.

The National Register Committee to be monitored shall be informed by the FEANI Secretariat of the proposed composition of the MP and invited to show cause why any member is unsuitable. In the event that such an objection is lodged, the Secretariat must advise the OMP and EMC to take such steps as are necessary and appropriate to resolve the situation. If unable to achieve consensus, the FEANI Board shall finalise the membership of the MP.

2. Procedures

2.1 Application procedure

A National Preferred Partner who established and composed a National Register Committee, wishing to award the *Engineering Card*, should first contact the FEANI Secretariat. In the latter case, the application must be supported by the FEANI National Member. Applications shall be provided in English. The Secretariat will provide the necessary documentation on procedures and guidelines.

The applicant Organisation will be informed that a mentoring service is available should it want to make use of it. The mentoring will focus on providing advice and guidance on the verification and acceptance policies and procedures to be used by the Organisation which may wish to act as a National Register Committee.

This National Register Committee shall be independent of the academic institutions delivering accredited or recognised programmes within their nation. Typically, a National Register Committee will be formed within or under the jurisdiction of authorities, agencies or institutions which are representative of the engineering profession, with statutory powers or recognised professional authority for maintenance of national registers of engineers.

Before endorsement is granted, both the National Register Committee and the National Preferred Partner will be required to affirm their acceptance of all sections of this document.

Permission to award the *Engineering Card* will normally be granted for a period of five years, subject to endorsement by continuous monitoring over this period. In addition, a newly-endorsed National Register Committee will be subject to periodic monitoring in the second year after initial endorsement.

2.2 Continuous monitoring

Each FEANI National Preferred Partner will provide an Annual Report prepared by its National Register Committee concerning a specific year, before 1 April of the succeeding year. The FEANI Secretariat will confirm its receipt.

The MP shall review the Report and send their findings to the OMP by 15 May, with a copy provided to the FEANI National Preferred Partner and National Register Committee being monitored. Any issues or recommendations identified by the MP shall be considered by the OMP.

The recommendations open to the Overall Review Team are as follows :

- a) the criteria for acceptance of the Annual Report are met and the FEANI National Preferred Partner and National Register Committee may continue to award the *Engineering Card*; or
- b) the criteria for acceptance of the Annual Report have not been met.

In conjunction with the National Register Committee, OMP and EMC should take such steps as are necessary and appropriate to resolve the situation. In the meantime, the FEANI National Preferred Partner and the National Register Committee may continue to receive applications but shall not award further *Engineering Card*. If unable to achieve consensus, the FEANI National Preferred Partner and the National Register Committee shall have the option of requesting an immediate periodic review or to withdraw from the *Engineering Card*.

Prior to 1 July, the Chair of the OMP will prepare a summary report on the previous year's continuous monitoring of all endorsed National Register Committees and any recommendations to the EMC. A copy of that report must be furnished to each FEANI National Preferred Partner and National Register Committee through the Secretariat, no later than 60 days prior to the next FEANI General Assembly.

2.3 Periodic monitoring

Periodic monitoring is to enable a thorough examination of the governance, procedures and performance of a FEANI National Preferred Partner and National Register Committee to enable continued endorsement of their national system. The governance, procedures and performance are to be examined more specifically relating to the compliance with the provisions of Sections A, B and C of the Engineering Card (see Clause 7 of this Handbook, detailing the design regulations).

The FEANI Secretariat should publish annually, no later than 1 July, a schedule for the programme of monitoring activities for the coming calendar year. Periodic monitoring shall include observation of the application process in the National Register Committees, including verification, acceptance and if appropriate, rejection, appeals and removal. This observation may be based on current applications in progress and/or by records of previous applications.

At least two members of the MP shall attend. The monitoring process shall also include observation of a meeting of the National Register Committee. At least one member of the MP shall attend. The National Register Committee shall be invited to propose a suitable process, timetable and administrative support mechanism, for consideration by the MP. Reasonable costs incurred by members of the MP must be borne by the National Register Committee or the FEANI National Preferred Partner.

All discussions concerning monitoring must be held in confidence by the MP. At the conclusion of each monitoring activity, the MP shall forward a draft report to the National Register Committee for comment on factual correctness. The final report and recommendations shall be sent to the OMP as soon as reasonably practicable. A copy of that report shall be furnished to the Registration Committee through the Secretariat.

The recommendations open to OMP are as follows:

- a) the governance, procedures and performance be accepted as leading to outcomes substantially equivalent to Sections A, B and C of the Card and that the National Register Committee be endorsed for a further five years, subject to continuous monitoring; or
- b) the National Register Committee be endorsed for a period of not more than one year subject to the Committee providing, within six months, a report which satisfies the OMP that adequate steps are being taken to address the specific issues identified by the MP; or
- c) there is serious deficiency. In conjunction with the National Register Committee, OMP and EMC should take such steps as are necessary and appropriate to resolve the situation. In the meantime, the National Register Committee may continue to receive applications but shall not award further Engineering Card.

If a National Register Committee is unwilling or unable to remedy serious deficiency, this shall be reported to the FEANI Board. The FEANI Secretariat shall give notice that the National Register Committee has six months from the date of the notice in which to demonstrate that it has taken appropriate action.

If, after a six months, OMP judges that the National Register Committee has not remedied any serious deficiency, that National Register Committee shall no longer be endorsed by FEANI for award of the *Engineering Card*.

If the FEANI National Preferred Partner fails to meet its financial obligations, its National Register Committee shall no longer be a FEANI-endorsed National Register Committee, unless the FEANI Board, in consultation with the EMC, accepts that there are exceptional circumstances giving rise to the non-payment of annual subscription. In such circumstances the FEANI Board may give the FEANI National Preferred Partner a reasonable time, normally three months, within which to make payment. If payment is not received within this period, the endorsed status of the National Register Committee will lapse.

2.4 General Meeting of the FEANI National Preferred Partners

A general meeting of the endorsed FEANI National Preferred Partners, chaired by the EMC Chair, shall be held every three years. The location and date should normally be selected by the previous general meeting. The location and date shall be chosen having regard to the wish to minimise overall travel costs. Each FEANI National Preferred Partner should arrange for at least one representative to attend the general meeting, to be briefed on the matters to be raised and to engage fully in the business of the meeting. Minutes of each meeting will be recorded by the Secretariat and made available to EMC and Monitoring Panels.

2.5 FEANI General Assembly

The chair of EMC will provide a yearly overall review report on *Engineering Card* to the FEANI General Assembly. The report shall include:

- a summary of the current principal characteristics of the system
- information on newly-endorsed National Register Committees and further applications in progress
- information on numbers of *Engineering Card* issued
- a report of the General Meeting, if appropriate
- actions taken to address concerns identified by the earlier Monitoring Panels
- a summary of the findings of current Monitoring Panels
- changes of substance to the verification and acceptance criteria, policies or procedures for *Engineering Card* , and the rationale for these changes
- recommended actions with appropriate action statements.

6. OTHER ORGANIZATIONAL ISSUES

1. Contract

Before the Engineering Card can be issued in a country, a contract must be concluded between FEANI and the engineering organization which is taking over the responsibility for the issuing of the Engineering Card in the respective country (being the FEANI National Preferred Partner). The contract shall have a duration of five years and can be indefinitely renewed. The FEANI Board shall determine the concluding and renewal of a contract.

2. Data Storage and Data Transfer

As a matter of principle, all data is stored in a decentralised manner in the individual countries. In doing so, the data protection regulations valid in the respective country are to be complied with and suitable data security measures taken. The following data shall be transferred to FEANI at least weekly:

- a) at the first issue of an Engineering Card:
 - Name of country providing the card data
 - Gender (Mr., Mrs.)
 - Title
 - First name
 - Surname
 - Date of birth
 - Country of birth
 - Card number
 - Issue date
 - Awarded categories (A-C)
- b) for unsuccessful candidates:
 - Name of country providing the card data
 - Gender (Mr., Mrs.)
 - Title
 - Surname
 - First name
 - Country of birth
 - Date of birth
 - Date of the rejection decision
- c) at repeated issue of an Engineering Card:
 - Name of country providing the card data
 - Gender (Mr., Mrs.)
 - Title
 - Surname
 - First name
 - Country of birth
 - Date of birth
 - Card number
 - Issue date of the old card
 - Issue date of the new card
 - Awarded categories (A-C)

The FEANI National Preferred Partner in the respective country is responsible for the transfer of data. He is free to :

- enter the data on the internet using an input mask provided by FEANI, or
- transfer the data via an interface between the database in the respective country and the FEANI database, whereby the costs, if any, for the development of such an interface are to be borne by the contractual partner.

3. Costs and License Fees

The costs for issuing the Engineering Card and for the ongoing data administration are determined freely by the FEANI National Preferred Partner for the respective country. FEANI shall receive from the respective contractual partner a license fee in the amount of EUR 10,- per issued Engineering Card. This license fee is also due for the renewal of an Engineering Card. Any taxes are already included in this amount. FEANI calculates the license fee on the basis of the data transferred (see item 2 above) and issues to the contractual partner an invoice for these license fees on a quarterly basis.

4. Compliance with Regulations and Reporting

The FEANI National Preferred Partner is responsible for compliance with the regulations and guidelines laid down in the “Handbook”. These include:

- a. Compliance with the regulations for issuing the Engineering Card
- b. Compliance with the design specifications for the identification card and for the register statement
- c. The preparation of an annual report by its National Register Committee in accordance with the requirements
- d. Cooperation with the EMC with regard to quality assurance and compliance with the rules and procedures as outlined in Clause 5 of this Handbook
- e. Compliance with “Organisational Issues”

If these rules are infringed, FEANI will issue a warning. The infringements must be remedied by the contractual partner within a reasonable period. If the infringements are not remedied within a reasonable period, FEANI is entitled to terminate the contract with the respective contractual partner without notice. For the specific obligations and consequences resulting from the quality assurance monitoring process, reference is made to Clause 5 of this Handbook. The FEANI Board shall determine if a contract is to be terminated.

5. Review and Updating of the Handbook

It is intended that the “Handbook” will be subject for review, up-dating, amending and modifying by the EMC once every calendar year, starting by mid 2012.

7. DESIGN REGULATIONS

For all details on the dimension, fonts and colours of the Engineering Card, application of below specifications is required.

A. Card Layout

1. Objects, Colours and Card Details

- The integration and arrangement of the objects, as well as their size, are binding as specified in the Styleguide
- As a basic rule, the card can be bilingual, whereby the English translation (when applicable) of the card details given in the national language must take place in accordance with the Styleguide.
- Logo of the association: if the applicant for the card is not a member of a responsible body for the card, the card will not feature a logo. Otherwise the specifications of the Styleguide are valid for the size proportions (e.g. VDI).
- The colour layout and the background design of the card are binding. ASIIN Consult GmbH will provide a workable template.
- The card number is formed by: the country code (e.g. DE for Germany), followed by the year of issue (2 digits) and by a consecutive 5-digit number always starting at 00001 on 1.1) to be allocated by the national federation.

2. Fonts

- The font type (Isonorm 3098 LW20, Regular) is binding.
- The font size may vary according to special linguistic features of the given country (e.g. subtitle for the headline "engineerING" card may be featured in a smaller font size if the term requires more space in another language).
- The font size for all other details is binding.

B. Register Excerpt Layout

1. Objects, Colours and Register Excerpt Details

- The integration AND arrangement of the objects as well as their size are binding as specified in the Styleguide.
- As a basic rule, the register excerpt shall be bilingual, whereby the English translation of the register excerpt details given in the national language must take place in accordance with the Styleguide.

- Logo of the association: if the applicant for the card is not a member of a responsible body for the card, the card will not feature a logo. Otherwise the specifications of the Styleguide are valid for the proportions (e.g. VDI).
- The colour layout and the background design of the register excerpt are binding. ASIIN Consult GmbH will provide a workable template.
- ID Number: please refer to Card.

2. Fonts

- The font type (Isonorm 3098 LW20, Regular) is binding.
- The font size may vary according to special linguistic features of the given country.
- The font size for all other details of the register excerpt is binding.

3. Measurements

- The grid measurements are binding in every case.

C. National Specificities

The categories that are displayed on the Card are as follows:

1	=	Surname + title
2	=	First Name
3	=	date and place of birth
4a	=	date if issue
4b	=	date of expiry
5	=	member of association/organization
6	=	ID number
7	=	signature
8	=	free category -- can be used/defined by National Register Committee, if applicable, for instance name of university or specific engineering discipline, etc.
9	=	should include the internet-address of the database

On the **frontside** of the Card, each country is free to include information of his choice under category 8. Category 8 is a summary of what is in any case explained on the **backside** of the Card.

Style guide Frontside Fonts

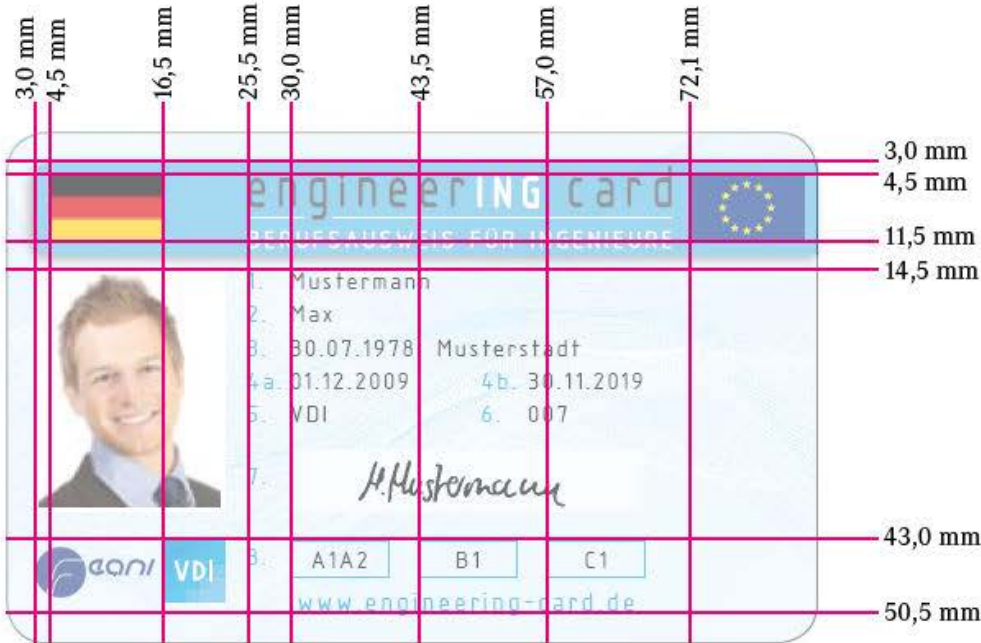
Schriften | Fonts

Schriften | Font
Größe | Size 7,7 pt
ZAB | Line Spacing 10 pt
Laufweite | Tracking an Logobreite anpassen (hier 70/1000 Geviert) fit to width of the logo (in this case 70/1000 em)

Schriften | Font
Größe | Size 7,7 pt
ZAB | Line Spacing 10 pt
Farben | Colours C=100 M=0 Y=0 K=0
 C=0 M=0 Y=0 K=100

Style guide Frontside Measurements

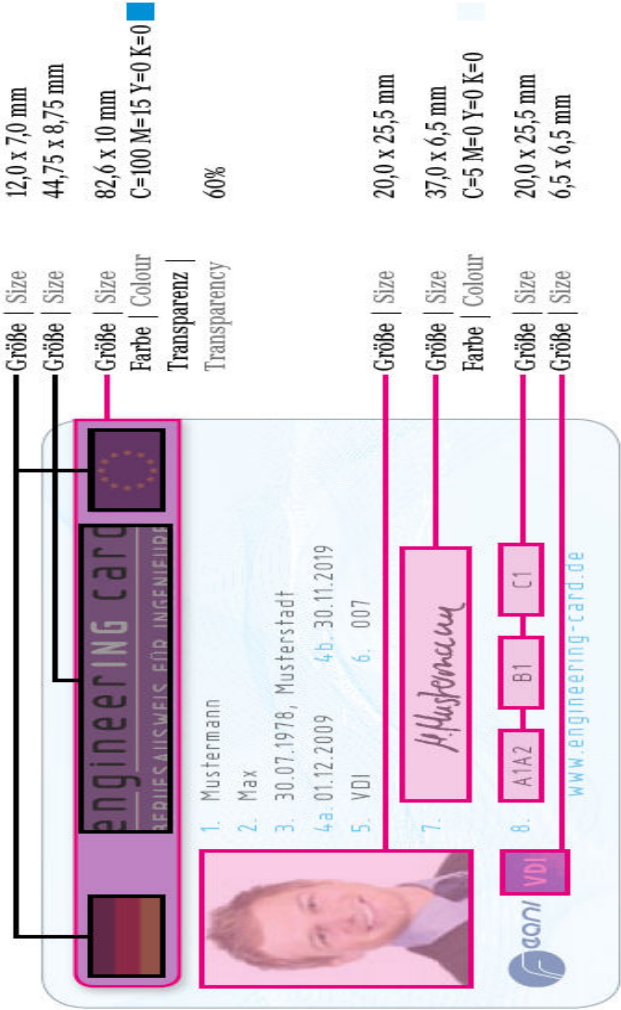
Maße | Measurements



Style guide Frontside Objects

Styleguide engineering ING Card

Objekte | Objects



Style guide Backside Fonts

Schriften | Fonts

1. Name / Titel		08. ...		Schriftart Font	Isonorm3098 LW20, Regular
2. Vorname / Given Name		A1	Bachelor / Diplom (FH)	Größe Size	5 pt
3. Geburtsdatum		A2	Master / Diplom (TU/TH)	ZAB Line Spacing	6 pt
und -ort		A3	Dr.-Ing.		
4a. Ausstellungsdatum			Berufserfahrung Professional Experience		
4b. Gültig bis		B1	Unternehmen Free Economy	Schriftart Font	Isonorm3098 LW20, Regular
4c. Date and Place of Birth		B2	öffentl. Dienst Civil Service	Größe Size	6 pt
5. Verwandtschaftsgehörigkeit		B3	selbstständig Self-employed	ZAB Line Spacing	7 pt
5a. Member of Association			Weiterbildung Further Education	Farben Colours	C=100 M=0 Y=0 K=0
6. Anwesennummer			Seminar mit Teilnahmebescheinigung		C=70 M=0 Y=0 K=0
7. Unterschrift		C1	Tutorial with Certificate of Attendance		C=0 M=0 Y=0 K=100
8. Schlüssel für Qualifikationen		C2	Seminar mit Abschlussprüfung		C=0 M=0 Y=0 K=0
9. ...		C3	Fortbildung mit Zeugnis	Schriftart Font	Isonorm3098 LW20, Regular
10. ...				Größe Size	10 pt
11. ...				ZAB Line Spacing	12 pt
12. ...				Farben Colours	C=0 M=0 Y=0 K=40

Style guide Backside Measurements

Maße | Measurements

Maße Measurements	1,9 mm	5,4 mm	23,3 mm	25,2 mm	6,0 mm	36,5 mm	15,5 mm	
01. Name/Titel Surname/Title								2,5 mm
02. Vorname Given Name								
03. Geburtsdatum and -ort Date and Place of Birth								
04a. Ausstellungsdatum Date of Issue								
04b. Gültig bis Date of Expiry								
05. Mitgliedszugehörigkeit Member of Association/ Organisation								3,1 mm
06. Mitgliedsnummer D Number								
07. Unterschrift Signature								6,1 mm
08. Schlüssel für Qualifikationen Key for Qualifications								
09. ID-Nummer ID Number								47,5 mm

08.	Studium Academic studies		Datum Date
A1	Bachelor/Diplom [FH]		30.07.2003
A2	Master/Diplom [TU/TH]		27.11.2005
A3	Dr.-Ing.		
Berufserfahrung Professional Experience			
B1	Unternehmen Free Economy		X
B2	öffentl. Dienst Civil Service		
B3	selbstständig Self-employed		
Weiterbildung Further Education			Anzahl Number
C1	Seminar mit Teilnahmebescheinigung Tutorial with Certificate of Attendance		1
C2	Seminar mit Abschlussprüfung Tutorial with Final Exam		
C3	Fortbildung mit Zeugnis Advanced Education with Certificate		

Style guide Backside Objects

Styleguide engineering Card

Objekte | Objects

01. Name/Titel
Surname/Title

02. Vorname Given Name

03. Geburtsdatum und -ort
Date and Place of Birth

04a. Ausstellungsdatum
Date of Issue

04b. Gültig bis
Date of expiry

05. Verbandszugehörigkeit
Member of Association/Organisation

06. Ausweisnummer
ID Number

07. Unterschrift
Signature

08. Schlüssel für Qualifikationen
Key for Qualifications

06. Studium Academic studies		Datum Date
A1	Bachelor/Diplom (FH)	30.07.2003
A2	Master/Diplom (TU/TH)	27.11.2005
A3	Dr.-Ing.	
Berufserfahrung Professional Experience		
B1	Unternehmen Free Economy	X
B2	öffentl. Dienst Civil Service	
B3	selbstständig Self-employed	
Weiterbildung Further Education		
C1	Seminar mit Teilnahmebescheinigung Tutorial with Certificate of Attendance	1
C2	Seminar mit Abschlussprüfung Tutorial with Final Exam	
C3	Fortbildung mit Zeugnis Advanced Education with Certificate	

Stärke | Thickness 2 pt

Stil | Style

Farbe | Colour C=40 M=15 Y=0 K=0

Stil | Style

Farbe | Colour C=30 M=15 Y=0 K=0

Größe | Size 58,0 x 49,0 mm

Farbe | Colour C=0 M=0 Y=0 K=0

Transparenz | Transparency 40%

Größe | Size 36,5 x 3,1 mm

Farbe | Colour C=100 M=15 Y=0 K=0

Transparenz | Transparency 60%

Größe | Size 15,5 x 3,1 mm

Farbe | Colour C=100 M=15 Y=0 K=0

Transparenz | Transparency 60%

Größe | Size 19,5 x 4,0 mm

Farbe | Colour C=40 M=15 Y=0 K=0

Transparenz | Transparency 40%

Style guide Register Front-side Fonts

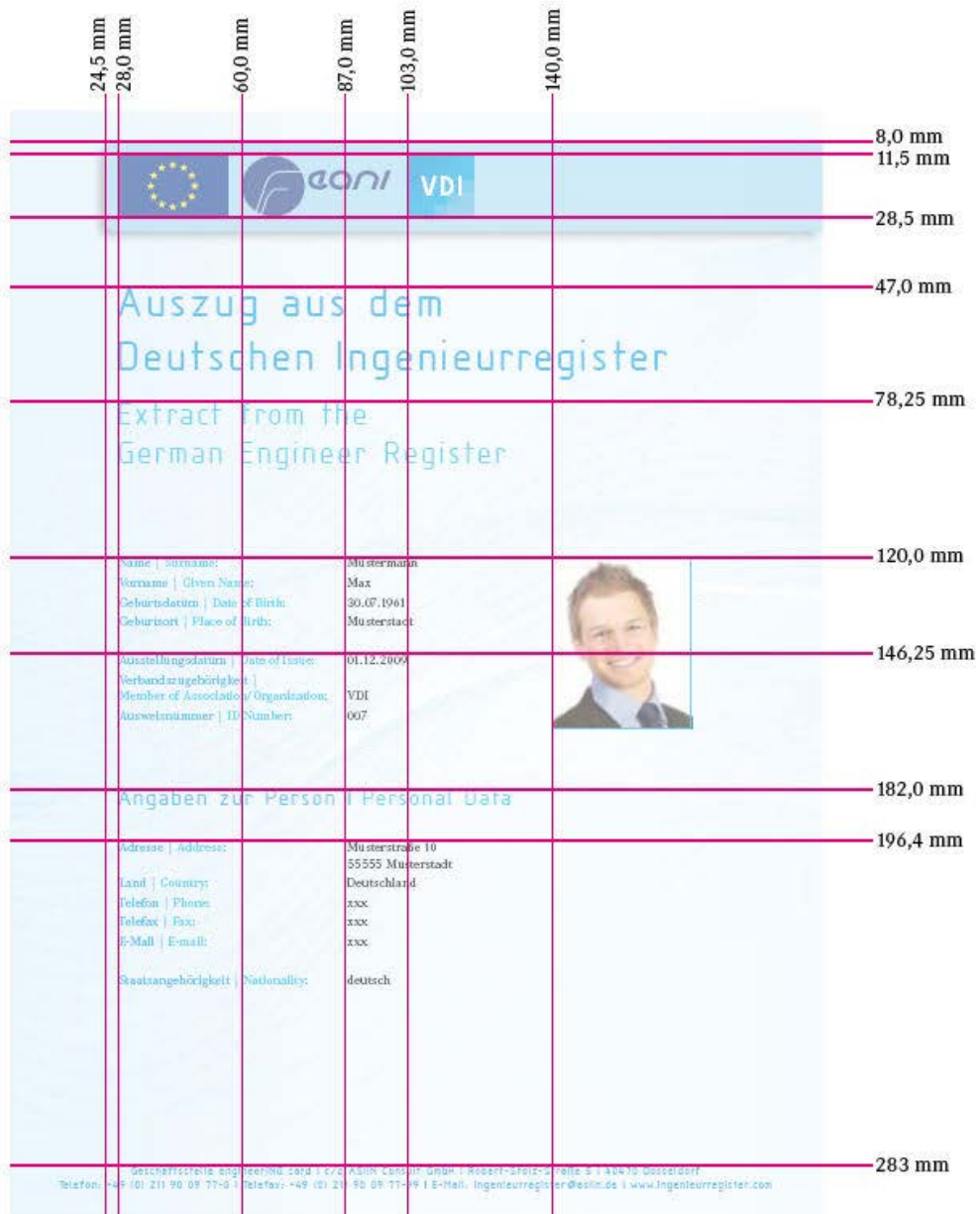
Schriften | Fonts

The image shows a document layout for the German Engineer Register. It features a header with logos for the European Union, VDI, and a stylized 'f' logo. The main content is divided into several sections, each with a pink border and a corresponding font specification table to its right. The sections include the title, an English translation, personal data, and contact information. A small portrait of a man is also present.

Section	Font	Size	Line Spacing	Alignment
Auszug aus dem Deutschen Ingenieurregister	Isonorm3098 LW20, Regular	34 pt	41 pt	
Extract from the German Engineer Register	Isonorm3098 LW20, Regular	25 pt	30 pt	
Name Surname: Mustermann Vorname Given Name: Max Geburtsdatum Date of Birth: 30.07.1981 Geburtsort Place of Birth: Musterstadt Ausstellungsdatum Date of Issue: 01.12.2009 Verbandszugehörigkeit Member of Association Organisation: VDI Ausweisnummer ID Number: 007	Corporate A, Regular	10 pt	12 pt	
Angaben zur Person Personal Data	Isonorm3098 LW20, Regular	18 pt	22 pt	
Adresse Address: Musterstraße 10 55555 Musterstadt Land Country: Deutschland Telefon Phone: xxx Telefax Fax: xxx E-Mail E-mail: xxx Staatsangehörigkeit Nationality: deutsch	Corporate A, Regular	10 pt	12 pt	
VERBAND DEUTSCHER INGENIEURE (VDI) e.V. ASSOCIATION OF GERMAN ENGINEERS (VDI) e.V. ASSOCIATION OF GERMAN ENGINEERS (VDI) e.V. Telefon: +49 (0) 211 39 89 77-0 Telefax: +49 (0) 211 39 89 77-99 E-Mail: ingenieurregister@vdi.de www.ingenieurregister.com	Isonorm3098 LW20, Regular	9 pt	11 pt	zentriert centered

Style guide Register Front-side Measurements

Maße | Measurements



Style guide Register Front-side Objects

Styleguide Registerauszug

Objekte | Objects

Größe | Size 28,0 x 17,0 mm

Größe | Size 38,5 x 17,0 mm

Größe | Size 17,0 x 17,0 mm

Größe | Size 185,5 x 24,0 mm

Farbe | Colour C=100 M=15 Y=0 K=0 ■

Transparenz | Transparency 30%

Größe | Size 35,5 x 45,0 mm

Name | Surname: Mustermann
Vorname | Given Name: Max
Geburtsdatum | Date of Birth: 30.07.1961
Geburtsort | Place of Birth: Musterstadt

Ausstellungstermin | Date of Issue: 01.12.2009
Verbandszugehörigkeit | Member of Association/Organization: VDI
Ausweisnummer | ID Number: 007

Angaben zur Person | Personal Data

Adresse | Address: Musterstraße 10
55555 Musterstadt

Land | Country: Deutschland

Telefon | Phone: xxx

Telefax | Fax: xxx

E-Mail | E-mail: xxx

Staatsangehörigkeit | Nationality: deutsch

Geschaftsteile engineering care t. c./o. ADIN Consult GmbH | Robert-Ströb-Strasse 5 | 40470 Düsseldorf
 Telefon: +49 (0) 211 90 09 77-0 | Telefax: +49 (0) 211 90 09 77-99 | E-Mail: Ingenieurregister@adin.de | www.ingenieurregister.com

Style guide Register Backside Fonts

Styleguide Registerauszug

Schriften | Fonts

Studium Academic studies		Schriftart Font	Isonorm3098 LW20, Regular
1. Abschluss 1st Graduation Degree		Größe Size	12 pt
Academischer Titel Academic Title	Bachelor of Science (BSc)	ZAB Line Spacing	14,4 pt
Datum Date	30.07.2003		
Studiengang Course of Studies	Mechatronik		
Hochschule University	Ruhruniversität Bochum		
2. Abschluss 2nd Graduation Degree			
Academischer Titel Academic Title	Master of Science (MSc)		
Datum Date	27.11.2005		
Studiengang Course of Studies	Mechatronik		
Hochschule University	Ruhruniversität Bochum		
Berufserfahrung Professional Experience			
Zeitraum Period	01. Mai 2007 bis heute	Schriftart Font	Corporate A, Regular
Arbeitgeber Employer	Musterfirma AG, Köln	Größe Size	10 pt
Funktion Function	Leiter Konstruktion	ZAB Line Spacing	12 pt
Tätigkeiten Field of work	= XIX		
	= XIX		
Zeitraum Period	01. Januar 2006 bis 30. April 2007		
Arbeitgeber Employer	Musterfirma AG, Köln		
Funktion Function	Konstruktionsingenieur		
Tätigkeiten Field of work	= XIX		
	= XIX		
Weiterbildung Further Education			
Zeitraum Period	01. Juli bis 10. Juli 2001		
Titel Title	Dat Ingenieur als Führungskraft		
Art Form	Seminar		
Anbieter Offerer	VDI Wissensforum GmbH		
Zeitraum Period			
Titel Title			
Art Form			
Anbieter Offerer			
<small> Geschäftsstelle IngenieurRegister GmbH c/o AGIR Casalet GmbH Robert-Frank-Straße 9 42699 Düsseldorf Telefon: +49 (0) 211 92 30 27-0 Telefax: +49 (0) 211 92 30 27-49 E-Mail: ingenieurregister@agir.de www.ingenieurregister.com </small>		Schriftart Font	Isonorm3098 LW20, Regular
		Größe Size	9 pt
		ZAB Line Spacing	11 pt
		Ausrichtung Alignment	zentriert centered
		Farben Colours	C=100 M=0 Y=0 K=0 ■ C=70 M=0 Y=0 K=0 ■ C=0 M=0 Y=0 K=100 ■ C=0 M=0 Y=0 K=70 ■

Style guide Register Backside Measurements

Styleguide Registerauszug

Maße | Measurements

			13,0 mm
Studium Academic studies			
1. Abschluss 1st Graduation Degree			
Akademischer Titel Academic Title	Bachelor of Science (BSc)		
Datum Date	30.07.2003		
Studiengang Course of Studies	Mechatronik		
Hochschule University	Ruhruniversität Bochum		
2. Abschluss 2nd Graduation Degree			
Akademischer Titel Academic Title	Master of Science (MSc)		
Datum Date	27.11.2005		
Studiengang Course of Studies	Mechatronik		
Hochschule University	Ruhruniversität Bochum		
Berufserfahrung Professional Experience			
Zeitraum Period	01. Mai 2007 bis heute		
Arbeitgeber Employer	Mustermann AG, Köln		
Funktion Function	Leiter Konstruktion		
Tätigkeiten Field of work	= xxx		
	= xxx		
Zeitraum Period	01. Januar 2006 bis 30. April 2007		
Arbeitgeber Employer	Mustermann AG, Köln		
Funktion Function	Konstruktionsingenieur		
Tätigkeiten Field of work	= xxx		
	= xxx		
Weiterbildung Further Education			
Zeitraum Period	01. Juli bis 10. Juli 2001		
Titel Title	Der Ingenieur als Führungskraft		
Art Form	Seminar		
Anbieter Offerer	VDI Wissensforum GmbH		
Zeitraum Period			
Titel Title			
Art Form			
Anbieter Offerer			
<small>Geschäftsstelle: engineer:RE e-mail: AS/IN e-mail: AS/IN Robert-Stolz-Straße 5 40470 Düsseldorf Telefon: +49 (0) 211 90 09 77-0 Telefax: +49 (0) 211 90 09 77-99 E-Mail: ingenieurregister@esin.de www.ingenieurregister.com</small>			283 mm

Style guide Register Backside Objects

Styleguide Registerauszug

Tabelle | Table

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Studium Academic studies			
1. Abschluss 1st Graduation Degree			
Akademischer Titel Academic Title	Bachelor of Science (BSc)		
Datum Date	30.07.2003		
Studiengang Course of Studies	Mechatronik		
Hochschule University	Ruhruniversität Bochum		
2. Abschluss 2nd Graduation Degree			
Akademischer Titel Academic Title	Master of Science (MSc)		
Datum Date	27.11.2005		
Studiengang Course of Studies	Mechatronik		
Hochschule University	Ruhruniversität Bochum		
Berufserfahrung Professional Experience			
Zeitraum Period	01. Mai 2007 bis heute		
Arbeitgeber Employer	Mustermann AG, Köln		
Funktion Function	Leiter Konstruktion		
Tätigkeiten Field of work	- xxx		
	- xxx		
Zeitraum Period	01. Januar 2006 bis 30. April 2007		
Arbeitgeber Employer	Mustermann AG, Köln		
Funktion Function	Konstruktionsingenieur		
Tätigkeiten Field of work	- xxx		
	- xxx		
Weiterbildung Further Education			
Zeitraum Period	01. Juli bis 10. Juli 2001		
Titel Title	Der Ingenieur als Führungskraft		
Art Form	Seminar		
Anbieter Offerer	VDI Wissensforum GmbH		
Zeitraum Period			
Titel Title			
Art Form			
Anbieter Offerer			
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<small> Geschäftsstelle engineeringS - card c/o ASIM Consult GmbH Robert-Scholz-Straße 5 40470 Düsseldorf Telefon: +49 (0) 211 90 09 11-0 Telefax: +49 (0) 211 90 09 17-99 E-Mail: ingenieurregister@asim.de www.ingenieurregister.com </small>			

8. PROPOSED NATIONAL REGISTER COMMITTEE'S INTERNAL REGULATIONS

As outlined in Clause 4 of this Handbook, the National Register Committee is giving a binding recommendation to the FEANI National Preferred Partner, for the issuance of the professional cards and the acceptance of the applicant into the National Engineering Register. The National Register Committee's decisions are to be in accordance with national regulations concerning those professionals who may carry the "title" engineer. Engineers may register when meeting specified prerequisites.

1. Tasks and Responsibilities

- 1.1 The National Register Committee shall decide on the acceptance of applicants into the Register and formulate a binding advice to the FEANI National Preferred Partner. It has to check the authenticity of the information provided by the applicant regarding his identity, his educational qualifications, work experience and training/CPD. To this end, corresponding rules shall be established and summarised in a handbook. The rules shall be continuously reviewed and adapted where necessary.
- 1.2 The National Preferred Partner shall process the applications received based on the rules established by the National Register Committee. In the case that individual applications cannot be unequivocally processed, the applications shall be presented to the National Register Committee.
- 1.3 The National Register Committee shall receive regular reports from the National Preferred Partner on the practicability of the rules defined.
- 1.4 The National Register Committee may appoint temporary working groups for specific tasks.
- 1.5 The National Register Committee must prepare an Annual Report to be handed over to the FEANI National Preferred Partner.

2. Members

The National Register Committee shall at least be composed of three (3) persons, amongst whom ideally a representative from university and a representative from industry.

3. Board of Complaints

The National Register Committee can establish an independent Board of Complaints. When established, the Board of Complaints shall consist of at least three persons, whereby one person if possible should be qualified for arbitration.

9. ANNUAL REPORT OF THE FEANI NATIONAL PREFERRED PARTNER

The annual report is prepared by the National Register Committee and handed over to the FEANI National Preferred Partner. The annual report shall provide information about:

- The quantity of applications and awarded cards
- The reasons for disaffirmations
- The complaints
- The principal points of discussion during the meeting of the National Register Committee
- The state of recognition of degree programmes
- The specifics

The minutes of the National Register Committee meetings have to be attached to the annual report.

Criteria of acceptance for the annual report:

- Is the report complete?
- Do all statements make sense?
- Are all conditions kept regarding bylaws, regulations of Board of Complaints and corporate design standards?

For queries a contact person has to be assigned. At least the report will be accepted if all queries are affirmed.



Engineering Card
Register Committee DE

DRAFT

**Requirements and procedural
principles**

for the award of the *Engineering Card* and the
related admission to the *German Register of
Engineers*

Preamble:

The following requirements and procedural principles regulate the decision-making practices regarding the award of the *Engineering Card* and admission to the German Register of Engineers. At the same time, they serve as transparent guidance for applicants for assessing the prospects for success of their application and to understand the decision-making practices of the Register Committee.

1 Introduction

The *Engineering Card* includes a professional Card which can be applied for voluntarily from the sponsoring association behind the concept, as well as a related entry in the *German Register of Engineers*. It is intended to provide a uniform and recognised format throughout Europe for the documentation of relevant qualifications for the pursuit of Engineering professions. Admission to the *German Register of Engineers* is decided by the Register Committee, which acts on behalf of the sponsoring association.

This manual serves as a basis for the decisions of the Register Committee. It specifies the standards and the modalities for the award of the *Engineering Card* and the entry in the *German Register of Engineers*.

2 Application

Applications for the *Engineering Card* are only possible by electronic means, and all necessary evidence must be enclosed as electronic documents. In order to prevent misuse and misrepresentation, the applicant must make a sworn statement that

- all data are correct and complete,
- the documents submitted correspond to the original documents.

3 Prerequisites for the award of the *Engineering Card* and admission to the *German Register of Engineers*

A prerequisite for the award of the *Engineering Card* is the successful completion of a basic Engineering course of study at a government-accredited German university. The applicant must also be entitled to bear the title of “engineer” according to the Engineering laws of the federal states.

The basic Engineering studies of German universities are:

- University studies leading to a *Diplom* (university, TU, TH, GH-D2) with the degrees Dipl.-Ing., Dipl.-Ing. univ.
- Studies leading to a *Diplom* from Universities of Applied Sciences (FH, GH-D1) with the degrees Dipl.-Ing., Dipl.-Ing. (FH)
- Bachelor’s degree courses from universities, universities of applied sciences and professional academies with the degrees B.Eng. and B.Sc.

In special cases, the Engineering Card can also be awarded to graduates of Engineering courses at foreign universities. Corresponding applications are, in any case, subject to a case-by-case examination by the Register Committee and are only processed if the applicant has acquired part of his or her professional qualification (study, professional experience or Engineering-specific continuing education) in Germany.

4 Classification of Engineering studies

The classification of Engineering studies (A) is based on the new European Higher Education System (Bologna System). It contains three categories corresponding to the three cycles of the ETS:

- A1** corresponds to the 1st cycle with the completion of the FCD (First Cycle Degree)
- A2** corresponds to the 2nd cycle with completion of the SCD (Second Cycle Degree)
- A3** corresponds to the 3rd cycle with completion of the TCD (Third Cycle Degree).

Degrees from old courses of study are assigned to one of the three cycles accordingly. For the German higher education system, the following assignment is thus obtained:

- A1** undergraduate Engineering courses from universities, universities of applied sciences and professional academies with the B.Eng. and B.Sc. degrees
Diplom-Ingenieur courses of universities of applied sciences (FH) and comprehensive universities (GH-D1) with the degrees Dipl.-Ing. and Dipl.-Ing. (FH)
- A2** Master Engineering courses from universities and universities of applied sciences with the degrees M.Eng. and M.Sc.
Diplom-Ingenieur courses from universities with the degrees Dipl.-Ing. and Dipl.-Ing. univ.
- A3** Doctorate to Dr.-Ing.

5 Recognition of studies

To facilitate the recognition process, a national list of accepted Engineering studies (A1 and A2) is prepared, which is continuously maintained and further developed by the Register Committee. Studies already included in this list are automatically taken into account by the office when examining application documents. In all other cases, the courses are submitted individually to the Register Committee for examination, and the list of recognised courses is continually expanded.

In order to assess the professional orientation of the course as an Engineering course, both the learning outcome descriptors of the EUR-ACE® Framework Standards as well as the subject-oriented requirements defined by FEANI for an Engineering course are used, also with regard to international recognition.

The following documents may be used for decision-making:

1. Diploma
2. Diploma Supplement
3. Transcript of Records
4. Curriculum overview
5. Published accreditation reports.

Recognition of A3 requires a doctorate in an engineering subject.

The recognition of foreign courses of study is always carried out by means of an individual case examination of the Register Committee.

6 Recognition of professional experience

Professional experience (B) is not a prerequisite for obtaining the *Engineering Card*; even graduates without professional experience can obtain the *Engineering Card*. However, a prerequisite for the documentation of B is a successful award of category A.

Only professional experience that has been acquired according to the recognised A1 degree is taken into consideration.

Work as an engineer can be documented under the category Professional Experience B. The table of Engineering functions used by FEANI serves as a reference for the recognition of professional experience. The Register Committee will continue to develop this list on the basis of submitted reference cases.

Applicants must submit proof of employment or, if appropriate, a certificate certified by the employer.

There are three categories:

- B1** Private sector employees
- B2** Public sector employees
- B3** Self-employed persons

The Register Committee decides the assignment into B1 to B3 on the basis of the documents submitted by the applicant.

A prerequisite for the award of B1, B2 or B3 on the *Engineering Card* is proof of at least 2 years of professional experience in the respective category.

7 Recognition of Continuous Professional Development (CPD)

Continuing education is not a prerequisite for obtaining the Engineering Card, but can be documented. Training can cover both subject-specific and interdisciplinary and multi-disciplinary topics. All professional and supra-professional qualifications for the maintenance and further development of engineering or non-engineering competence are recognised as Continuous Professional Development.

The engineering card system offers a system to document formal as well as informal or non-formal learning activities. The applicants themselves may choose the type of training activity they have taken and add information and evidence (if applicable).

Only continuing education activities which have been completed after the recognised A1 degree are taken into consideration.

The CPD activities may be of a technical or a non-technical nature.

The types of **technical learning activities** recognized for the Engineering Card are fourteen categories:

- a.) in-company training
- b.) external training
- c.) post graduate academic
- d.) engineering research
- e.) teaching or instructing
- f.) service in professional engineering organization
- g.) development of technical regulations, codes or norms
- h.) technical visit/assignment
- i.) participation in job-related conference, congress or convention
- j.) preparation and presentation of technical paper
- k.) preparation and publication in a profession-related publication

- l.) manufacturing, production, construction
- m.) technical quality control, inspection or evaluation
- n.) coordination and management

An engineer should provide on a regular basis their record of CPD to the engineering card offices by updating their information in the database. Providing the information about the CPD activities can be done at any time, however it is recommended that it is sent in only after an activity has been fully completed. The information the applicants have to provide are:

- Name and contacts
- National Engineering Association member
- For each type of the CPD activities accepted it should have a description of the CPD activity with the following information:
 - date/duration of the CPD activity (month/year)
 - name of CPD activity
 - short description of CPD activity
 - duration of the activity in hours
 - supporting documents of the CPD activity

Engineers should plan their CPD activities preferably in accordance with the identification of competencies required or recommended in a related qualification or job profile. This choice of the competencies required can be based on the engineer's self-assessment against criteria, rubrics or elements within the set of competences required.

The value of hours for some, but not all types is established by the FEANI CPD Policy (see table below). It is up to the engineer to gather as many hours of training as possible.

Type of CPD	Maximum values of hours	Comments
1. In-company training courses or lectures	No limit*	Taken in a lecture room or in a virtual environment.
2. Formal post graduate academic courses	No limit*	All such activities will involve some form of assessment.
3. External training courses	No limit*	Recognized institution or training provider.

4. Service in professional Engineering organization activities	Limit of 15 hours in average per year	May include serving in a volunteer capacity on boards and committees; being a member on higher education accreditation visits; assisting with CPD audits; mentoring a colleague for work experience purposes; contributions to participation in technical standards.
5. Technical visits or external assignments	Limit of 5 hours in average per year	Must be able to demonstrate how it has extended knowledge and skills related with the profession.
6. Updating professional development based in individual study	Limit of 5 hours in average per year	For any learning activity undertaken it is necessary to demonstrate how it has extended knowledge and skills related with the profession.
7. Preparation and presentation of a technical paper in a conference	Limit of 10 hours in average per year	Papers subject to critical peer review prior to publication.
8. Preparation and technical publication in a journal or a book	Limit of 20 hours in average per year	Publication must be related with the profession
9. Teaching or instructing in CPD related activities with the profession	Limit of 15 hours in average per year	This type is not considered for engineers that are members of higher education or research institutions
* Maximum sum of hours of 1., 2. and 3. is 25 in average per year		

Dependent of the amount of CPD taken annually, the categories indicated in the Engineering Card are:

- C1** Engineer with less than 20 hours of CPD annually
- C2** Engineer with 20 to 40 hours of CPD annually
- C3** Engineer with more than 40 hours of CPD annually

Requirement for the documentation of C1, C2 or C3 is satisfied by updating the database.

In addition to technical learning activities, applicants may also enter **non-technical learning activities**. The categories available are based on the European Competence Framework for Lifelong Learning¹. They comprise:

- foreign languages
- digital
- social and civic
- entrepreneurial
- others

The documentation of the learning activities is done in the same way as with the technical learning activities. However, the self-evaluation here is based on different European competence frameworks. For fields of competence, in which a specific competence framework is not (yet) available, the self-evaluation is based on the European Qualifications Framework (EQF).

8 Validity

The term of validity for the *Engineering Card* is fixed at 10 years.

9 Exclusion and deletion from the Register

If it is found that the applicant has provided false information or is found to be in breach of the ethical principles of the engineer's profession, the Register Committee reserves the right to delete the person concerned from the Register. In this case, all stored data of the person are blocked and deleted. Any identification that may still be valid must be returned or demonstrably destroyed.

¹ Office for Official Publications of the European Communities (2007): Key Competences for Lifelong Learning – A European Framework. Luxemburg.



engineerING card
Registerkommission DE

ENTWURF

Anforderungen und Verfahrensgrundsätze

für die Vergabe der *engineerING card* und
die damit verbundene Aufnahme
in das *Deutsche Ingenieurregister*

Dieses Projekt wurde mit Unterstützung der Europäischen Kommission finanziert. Die Verantwortung für den Inhalt dieser Veröffentlichung trägt allein der Verfasser; die Kommission haftet nicht für die weitere Verwendung der darin enthaltenen Angaben.

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Vorbemerkung

Die nachfolgenden Anforderungen und Verfahrensgrundsätze regeln die Entscheidungspraxis bezüglich der Vergabe der *engineerING card* und der Aufnahme in das Deutsche Ingenieurregister. Gleichzeitig dienen sie den Antragstellerinnen und Antragstellern als transparente Orientierungshilfe, um die Erfolgsaussichten ihres Antrages einschätzen und die Entscheidungspraxis der Registerkommission nachvollziehen zu können.

1 Einleitung

Die *engineerING card* beinhaltet einen auf freiwilliger Basis bei der ideellen Trägergemeinschaft beantragbaren Berufsausweis sowie einen damit verbundenen Eintrag in das *Deutsche Ingenieurregister*. Sie soll ein europaweit einheitliches und anerkanntes Format für die Dokumentation relevanter Qualifikationen für die Ausübung des Ingenieurberufes bieten. Über die Aufnahme in das *Deutsche Ingenieurregister* entscheidet die Registerkommission, welche im Auftrag der Trägergemeinschaft handelt.

Das vorliegende Handbuch dient der Registerkommission als Grundlage für ihre Entscheidungen. Es legt die Standards und die Modalitäten für die Vergabe der *engineerING card* und die Eintragung in das *Deutsche Ingenieurregister* fest.

2 Antragstellung

Anträge zur *engineerING card* sind ausschließlich auf elektronischem Weg möglich, wobei alle erforderlichen Nachweise als elektronische Dokumente beigelegt werden müssen. Um Missbrauch und Täuschung vorzubeugen, muss der Antragsteller eine eidesstattliche Erklärung darüber abgeben, dass

- alle Angaben richtig und vollständig sind,
- die eingereichten Unterlagen den Originaldokumenten entsprechen.

3 Voraussetzungen für die Vergabe der *engineerING card* und die Aufnahme in das *Deutsche Ingenieurregister*

Voraussetzung für die Vergabe der *engineerING card* ist der erfolgreiche Abschluss eines grundständigen ingenieurwissenschaftlichen Studiengangs an einer staatlich anerkannten deutschen Hochschule. Der Antragsteller muss zudem berechtigt sein, die Bezeichnung "Ingenieur" nach den Ingenieurgesetzen der Länder zu tragen.

Als grundständige Ingenieurstudiengänge von deutschen Hochschulen gelten:

- Diplomstudiengänge von Universitäten (Uni, TU, TH, GH-D2) mit den Abschlüssen Dipl.-Ing., Dipl.-Ing. univ.
- Diplomstudiengänge von Fachhochschulen (FH, GH-D1) mit den Abschlüssen Dipl.-Ing., Dipl.-Ing. (FH)
- Bachelorstudiengänge von Universitäten, Fachhochschulen und Berufsakademien mit den Abschlüssen B.Eng. und B.Sc.

In Sonderfällen kann die *engineerING card* auch an Absolventen ingenieurwissenschaftlicher Studiengänge ausländischer Hochschulen vergeben werden. Entsprechende Anträge unterliegen in jedem Fall einer Einzelfallprüfung durch die Registerkommission und werden nur dann behandelt, wenn der Antragsteller einen Teil seiner Berufsqualifikation (Studium, Berufserfahrung oder ingenieurspezifische Weiterbildung) in Deutschland erworben hat.

4 Klassifizierung von Ingenieurstudiengängen

Die Klassifizierung von Ingenieurstudiengängen (A) orientiert sich am neuen Europäischen Hochschulsystem (Bologna System). Sie beinhaltet drei Kategorien, die den drei Zyklen des EHS entsprechen:

- A1** entspricht dem 1. Zyklus mit dem Abschluss FCD (First Cycle Degree)
- A2** entspricht dem 2. Zyklus mit dem Abschluss SCD (Second Cycle Degree) **A3** entspricht dem 3. Zyklus mit dem Abschluss TCD (Third Cycle Degree).

Abschlüsse alter Studiengänge werden entsprechend den drei Zyklen zugeordnet. Für das deutsche Hochschulsystem ergibt sich demnach folgende Zuordnung:

- A1** Bachelor-Ingenieurstudiengänge von Universitäten, Fachhochschulen und Berufsakademien mit den Abschlüssen B.Eng. und B.Sc.
Diplom-Ingenieurstudiengänge von Fachhochschulen (FH) und Gesamthochschulen (GH-D1) mit den Abschlüssen Dipl.-Ing. und Dipl.-Ing. (FH)
- A2** Master-Ingenieurstudiengänge von Universitäten und Fachhochschulen mit den Abschlüssen M.Eng. und M.Sc.
Diplom-Ingenieurstudiengänge von Universitäten mit den Abschlüssen Dipl.-Ing. und Dipl.-Ing. univ.
- A3** Promotion zum Dr.-Ing.

5 Anerkennung von Studiengängen

Für die Erleichterung der Anerkennungsprozedur wird eine nationale Liste von akzeptierten Ingenieurstudiengängen (A1 und A2) erstellt, die von der Registerkommission kontinuierlich gepflegt und weiter entwickelt wird. Studiengänge, die bereits in dieser Liste enthalten sind, werden von der Geschäftsstelle bei der Prüfung der Antragsunterlagen automatisch berücksichtigt. In allen anderen Fällen werden die Studiengänge einzeln der Registerkommission zur Prüfung vorgelegt, wobei die Liste der anerkannten Studiengänge kontinuierlich erweitert wird.

Zur Bewertung der fachlichen Ausrichtung des Studienganges als Ingenieurstudiengang werden, auch im Hinblick auf die internationale Anerkennung, sowohl die Lernergebnis-Deskriptoren der EUR-ACE® Framework Standards als auch die von FEANI definierten fachorientierten inhaltlichen Anforderungen für einen Ingenieurstudiengang herangezogen.

Zur Entscheidungsfindung können folgende Dokumente herangezogen werden:

1. Abschlusszeugnis
2. Diploma Supplement
3. Transcript of Records
4. Curriculare Übersichten
5. Veröffentlichte Akkreditierungsberichte.

Für die Anerkennung von A3 ist eine Promotion in einem ingenieurwissenschaftlichen Fachgebiet erforderlich

Die Anerkennung von ausländischen Studiengängen erfolgt grundsätzlich durch eine Einzelfallprüfung der Registerkommission.

6 Anerkennung von Berufserfahrung

Berufserfahrung (B) ist keine Voraussetzung zur Erlangung der *engineerING card*; auch Absolventen ohne Berufserfahrung können die *engineerING card* erhalten. Voraussetzung für die Dokumentation von B ist allerdings eine erfolgreiche Zuerkennung der Kategorie A.

Es wird ausschließlich Berufserfahrung berücksichtigt, die nach dem anerkannten A1-Abschluss erworben wurde.

Unter der Kategorie Berufserfahrung B können die Tätigkeiten als Ingenieurin oder Ingenieur dokumentiert werden. Dabei kommt die von FEANI verwendete Tabelle der Ingenieurfunktionen als Referenz für die Anerkennung der Berufserfahrung zur Anwendung. Die Registerkommission wird diese Liste auf der Basis vorgelegter Referenzfälle weiterentwickeln.

Antragstellerinnen und Antragsteller müssen einen vom Arbeitgeber bestätigten Tätigkeitsnachweis oder ggf. ein Zeugnis einreichen.

Es wird zwischen drei Kategorien unterschieden:

- B1** Angestellte in der freien Wirtschaft
- B2** Angestellte im öffentlichen Dienst
- B3** Selbständige

Die Registerkommission fällt ihre Entscheidung über die Zuordnung in B1 bis B3 auf der Basis der vom Antragsteller eingereichten Dokumente.

Voraussetzung für die Vergabe von B1, B2 oder B3 auf der *engineerING card* ist der Nachweis von **mindestens 2 Jahren Berufserfahrung** in der jeweiligen Kategorie.

7 Anerkennung von Weiterbildungen

Weiterbildungen sind keine Voraussetzung zur Erlangung der *engineerING card*, können jedoch auf Antrag dokumentiert werden. Die Weiterbildung kann sowohl fachspezifische als auch interdisziplinäre und fachübergreifende Themen umfassen. Alle fachlichen und überfachlichen Qualifikationen zum Erhalt und zur Weiterentwicklung der ingenieurspezifischen und nicht-ingenieurspezifischen Kompetenzen werden als berufliche Weiterbildung anerkannt.

Die *engineerING card* bietet die Möglichkeit, formale, non-formale und informelle Lernaktivitäten in einer Datenbank zu dokumentieren. Die Antragsteller können dort die Art der Lernaktivität, die sie durchgeführt haben auswählen und – wenn nötig – hierzu Informationen und Nachweise ergänzen.

Nur erfolgreich durchgeführte und abgeschlossene Weiterbildungen nach dem anerkannten Abschluss der Stufe A1 werden berücksichtigt.

Die Lernaktivitäten können technischer oder nicht-technischer Natur sein.

Die Arten der technischen Lernaktivitäten, die im Rahmen der *engineerING card* anerkannt werden, können in die folgenden Kategorien eingeordnet werden:

- a.) unternehmensinternes Training
- b.) Fortbildung eines externen Anbieters
- c.) akademische Weiterbildung für Absolventen

- d.) ingenieurwissenschaftliche Forschung
- e.) Lehrer oder Ausbilder
- f.) Tätigkeit in einer Ingenieurorganisation
- g.) Entwicklung technischer Normen oder Regularien
- h.) technische Überprüfung/Projektarbeit
- i.) Teilnahme an berufsbezogener Fachkonferenz/-tagung
- j.) Vorbereitung und Veröffentlichung eines Fachartikels
- k.) Vorbereitung und Veröffentlichung einer Fachpublikation
- l.) Produktion, Konstruktion
- m.) technische Qualitätskontrolle, Inspektion oder Evaluation
- n.) Koordinierung und Management

Ingenieure, die sich für die engineerING card registriert haben, sollten ihre Lernaktivitäten regelmäßig in der Datenbank aktualisieren. Die Aktualisierung der Informationen in der Datenbank kann jederzeit erfolgen, es wird jedoch empfohlen, Lernaktivitäten erst einzustellen, wenn diese erfolgreich abgeschlossen sind. Der Antragssteller muss die folgenden Informationen bereitstellen:

- Name und Kontaktdaten
- Mitgliedschaft in welcher nationalen Ingenieurvereinigung
- Jede Lernaktivität muss mit den folgenden Informationen beschrieben werden:
 - Datum und Dauer der Lernaktivität (Monat/Jahr)
 - Benennung der Lernaktivität
 - kurze Beschreibung der Lernaktivität
 - Stundenaufwand während der Dauer der Lernaktivität
 - Nachweise zur Lernaktivität

Ingenieure sollten ihre Lernaktivitäten bevorzugt in Übereinstimmung mit Kompetenzanforderungen planen, die aufgrund einer angestrebten Qualifikation oder eines Stellenprofils empfohlen werden. Die Auswahl der benötigten Kompetenzen kann aufgrund einer Selbstbeurteilung bezüglich der Kriterien, Rubriken oder Elemente im gewünschten Kompetenzrahmen, erfolgen.

Die Dauer in Stunden kann für einige, aber nicht alle Arten von Lernaktivitäten aus der FEANI-Empfehlung zum Thema Weiterbildung abgeleitet werden. Ingenieure sollten so viele Stunden sammeln wie möglich.

Type of CPD	Maximum values of hours	Comments
1. unternehmensinterne Trainings	unbegrenzt*	In einem Vortragsraum oder in virtueller Umgebung
2. akademische Weiterbildung für Absolventen	unbegrenzt*	Diese Aktivitäten beinhalten eine Leistungsbeurteilung
3. externe Weiterbildungen	unbegrenzt*	Anerkannte Institution oder zertifizierter Anbieter

4. Tätigkeit in einer Ingenieurorganisation	Im Durchschnitt nicht mehr als 15 Stunden im Jahr	Kann ehrenamtliche Tätigkeiten in Gremien umfassen; Teilnahm an Akkreditierungsprozessen an Hochschulen; Unterstützung von Weiterbildungsmaßnahmen; Mentoring; Mitarbeit an Normensetzung
5. Technische Überprüfung/Projektarbeit	Im Durchschnitt nicht mehr als 5 Stunden im Jahr	Hier muss die Verbesserung der Fachkenntnisse und Fachkompetenzen nachweisbar sein
6. Ingenieurwissenschaftliche Forschung	Im Durchschnitt nicht mehr als 5 Stunden im Jahr	Hier muss die Verbesserung der Fachkenntnisse und Fachkompetenzen nachweisbar sein
7. Vorbereitung und Veröffentlichung eines Fachartikels	Im Durchschnitt nicht mehr als 10 Stunden im Jahr	Artikel wurden vor der Veröffentlichung von Fachleuten kritisch begutachtet
8. Vorbereitung und Veröffentlichung einer Fachpublikation	Im Durchschnitt nicht mehr als 20 Stunden im Jahr	Publikation muss im Zusammenhang mit der Ingenieur Tätigkeit stehen
9. Lehr- oder Ausbildungstätigkeit	Im Durchschnitt nicht mehr als 15 Stunden im Jahr	Dies umfasst nicht Hochschullehrende oder Beschäftigte von Forschungseinrichtungen
* Der Durchschnitt aus der Summe der Stunden aus 1., 2. und 3. ist maximal 25 Stunden im Jahr		

Abhängig von der jährlichen Anzahl der Weiterbildungen, können im Rahmen der engineerING card folgende Weiterbildungsniveaus erreicht werden:

- C1** Ingenieure mit weniger als 20 Stunden Lernaktivitäten im Jahr
- C2** Ingenieure mit 20 bis 40 Stunden Lernaktivitäten im Jahr
- C3** Ingenieure mit mehr als 40 Stunden Lernaktivitäten im Jahr

Für die Dokumentation der Stufen C1, C2 oder C3 genügt die kontinuierliche Aktualisierung der Datenbankeinträge.

Zusätzlich zu den technischen Lernaktivitäten, können Antragsteller auch nicht-technische Lernaktivitäten eintragen. Die zur Verfügung stehenden Kategorien sind auf der Grundlage des Europäischen Kompetenzrahmens für Lebenslanges Lernen¹ definiert worden und umfassen:

¹ Office for Official Publications of the European Communities (2007): Key Competences for Lifelong Learning – A European Framework. Luxemburg.



- Fremdsprachen
- Digital
- Sozial und Staatsbürgerlich
- Unternehmerisch
- Andere

Die Dokumentation der nicht-technischen Lernaktivitäten erfolgt auf gleiche Weise, wie bei den technischen Lernaktivitäten. Allerdings basiert die Selbstbeurteilung auf unterschiedlichen Europäischen Kompetenzrahmen. Für Kompetenzen, in denen noch kein spezifischer Kompetenzrahmen zur Verfügung steht, erfolgt die Selbstbeurteilung auf der Grundlage des Europäischen Qualifikationsrahmens (EQF).

8 Gültigkeit

Die Gültigkeit der engineerING card ist auf 10 Jahre begrenzt.

9 Ausschluss und Löschung aus dem Register

Sollte sich herausstellen, dass der Antragsteller falsche Angaben gemacht oder nachweislich gegen die ethischen Grundsätze des Ingenieurberufs verstoßen hat, behält sich die Registerkommission vor, betroffene Person aus dem Register zu löschen. In diesem Fall werden alle gespeicherten Daten der Person gesperrt und gelöscht. Ein ggf. noch gültiger Ausweis muss zurückgegeben oder nachweislich vernichtet werden.

Dieses Projekt wurde mit Unterstützung der Europäischen Kommission finanziert. Die Verantwortung für den Inhalt dieser Veröffentlichung trägt allein der Verfasser; die Kommission haftet nicht für die weitere Verwendung der darin enthaltenen Angaben.

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Inženjerska iskaznica

Odbor za registraciju HR

NACRT

Zahtjevi i Postupak

za izdavanje *Inženjerske iskaznice* i
uključivanje u odgovarajući
Hrvatski Registar Inženjera

Preambula:

Slijedeći uvjeti i načela reguliraju postupak donošenja odluke za dodjelu inženjerskih iskaznica i ulazak u Hrvatski registar inženjera koji posjeduju Europsku inženjersku iskaznicu. U isto vrijeme, oni služe kao transparentne smjernice za podnositelje zahtjeva za procjenu njihovih izgleda za dobivanje iskaznice i razumijevanje prakse odlučivanja Odbora za registraciju.

1. Uvod

Inženjerska iskaznica je profesionalna iskaznica koja se može koristiti dobrovoljno temeljem izdavanja od udruge koja poštuje koncept dodjeljivanja, te kao odgovarajući dokument za registriranje u *Hrvatski registar inženjera* koji imaju odobrenu inženjersku iskaznicu. Cilj je osigurati usklađeni i jedinstveni način priznavanja dokumentacije kojom se potvrđuje odgovarajuće kvalifikacije za obavljanje inženjerskih zanimanja u cijeloj Europi. Ulazak u *Hrvatski registar inženjera* s inženjerskom iskaznicom odobrava Odbor za registraciju koji djeluje u ime Hrvatskog inženjerskog saveza.

Ovaj Postupak služi kao osnova za odluke Odbora za registraciju. Postupak određuje standarde i način dodjele *Inženjerskih iskaznica* i upis u *Hrvatski registar inženjera*.

2. Aplikacija

Aplikacije za dobivanje Inženjerske iskaznice dopuštena je samo elektroničkim putem, i svi potrebni dokumenti moraju biti priloženi elektroničkim zapisom. Kako bi se spriječila zloupotreba i pogrešna interpretacija, podnositelj zahtjeva mora osigurati dokumentiranu izjavu:

- da su svi podaci točni i ispunjeni,
- da podaci odgovaraju izvornim dokumentima.

3. Preuvjeti za dodjelu Inženjerske iskaznice i ulazak u Hrvatski registar inženjera

Preuvjet za dobivanje *Inženjerske iskaznice* je uspješan završetak inženjerskog obrazovanja na studiju akreditiranom od Vlade Republike Hrvatske. Podnositelj zahtjeva mora imati pravo nositi titulu "inženjer" sukladno zakonu o znanstvenoj djelatnosti i visokom obrazovanju Republike Hrvatske.

Osnovna obrazovanja studija inženjerstva Hrvatskih sveučilišta su:

- Sveučilišni studij koji vodi ka diplomu (sveučilišta) sa stupnjevima univ.bacc.ing., mag.ing. (ekvivalent univ.ing i univ.dipl.ing)
- Diplomirao studij iz Visoke škole, Polytech. Sveučilišta primijenjenih znanosti i stručne akademije s stupnjem bacc.ing. (ekvivalent bacc.ing)

U posebnim slučajevima Inženjerska iskaznica također može biti dodijeljena diplomiranim inženjerima na stranim sveučilištima. Odgovarajuće aplikacije podliježu, u svakom slučaju, od slučaja do slučaja ispitivanju Odbora za registracije i mogu se poduprijeti samo ako osoba koja traži iskaznicu ima traženu razinu profesionalne osposobljenosti (studij, profesionalno iskustvo ili inženjersko-specifično kontinuirano obrazovanje) u Hrvatskoj.

4. Klasifikacija inženjerskih studija

Klasifikacija inženjerskih studija (A) se temelji na Europskom sustavu visokog obrazovanja (Bolonjski sustav). Sadrži tri kategorije koje odgovaraju ciklusima u ETCS:

- A1** odgovara 1. ciklusu sa završetkom FCD (prvi stupan ciklusa)
- A2** odgovara 2. ciklusu sa završetka SCD (drugi stupanj ciklusa)
- A3** odgovara 3. ciklusu kapaciteta TCD (Treći stupanj ciklusa).

Stupnjevi svih studijskih programa su dodijeljeni usklađeno jednom od tri ciklusa. Za hrvatsko visoko školstvo, tako je dobivena sljedeća raspodjela:

- A1** prediplomski inženjerski predmeti iz Sveučilišta, Sveučilišta primjenjenih znanosti i stručnih studija dodjeljuje se stupanj univ.bacc.ing., (ekvivalent univ.ing)
- A2** Master inženjerski predmeti iz Sveučilišnih programa, veleučilišta i visokih škola Republike Hrvatske sa stupnjeva Mag.ing. (ekvivalent univ.diplom-inženjera i tehničara)
- A3** Doktorat; dr.sc.

5. Priznavanje studija

Kako bi se olakšao proces priznavanja, nacionalni popis prihvaćenih inženjerskih studija (A1 i A2) je pripremljen, i koji se kontinuirano održava i razvija od strane Odbora za registraciju. Studije već uključene u ovaj popis automatski se uzimaju u obzir od strane Odbora prilikom ispitivanja prijavljenih dokumenata. U svim ostalim slučajevima, prijave se podnose pojedinačno Odboru za registriranje, a popis priznatih predmeta studija se kontinuirano proširuje.

Kako bi se procijenila profesionalna usmjerenost predmeta obrazovanja traži se ishod učenja prema EUR-ACE® standardu kao i usklađenost zahtjevima definiranim od FEANI-a za određeno inženjersko obrazovanje, također s obzirom na međunarodno priznanje.

Sljedeći dokumenti mogu se koristiti za donošenje odluka:

1. Diploma
2. Diploma-dodatci
3. Prijepis zapisa
4. Kurikulum
5. Objavljeni akreditacijski izvještaji.

Priznavanje A3 zahtjeva doktorat iz inženjerskih predmeta.

Priznavanje stranih studijskih programa uvijek se provodi kao pojedinačni slučaj ispitivanja koje provodi Odbor za registraciju.

6. Priznavanje profesionalnog iskustva

Profesionalno iskustvo (B) nije preduvjet za dobivanje *Inženjerske iskaznice*. Odgovarajuće obrazovani bez radnog iskustva mogu također dobiti inženjersku iskaznicu. Međutim, preduvjet za dokumentiranje B je uspješno prihvaćanje kategorije A.

Međutim, samo profesionalno radno iskustvo koje se stječe u skladu s priznatim A1 stupanjem se uzima u obzir.

Rad u svojstvu inženjera može se dokumentirati u kategoriju profesionalnog iskustva B. Tablica funkcija inženjera propisana od strane FEANI-a služi kao referenca za priznavanje stručnog iskustva. Odbor za registraciju će dalje razvijati ovaj popis na temelju već prihvaćenih referenca.

Podnositelj zahtjeva mora podnijeti dokaz o zaposlenju ili, ako je potrebno, potvrdu ovjerenu od strane poslodavca.

Postoje tri kategorije zaposlenja:

- B1** privatni sektor
- B2** javni sektor
- B3** samozapošljavanje

Odbor za registraciju odlučuje o vrsti zapošljavanja i iskustva B1-B3 temeljem dokumenata dostavljenih od natjecatelja.

Preduvjet za priznavanje B1 ili B2 ili B3 je dvogodišnje iskustvo u odgovarajućoj kategoriji.

7. *Priznavanje kontinuiranog profesionalnog razvoja (CPD)*

Kontinuirano obrazovanje nije preduvjet za dobivanje inženjerske iskaznice, ali može biti dokumentirano. Obrazovanje može obuhvatiti povezano specifične, interdisciplinarnе i multidisciplinarnе teme. Sve profesionalne i više-profesionalne teme za održavanje i daljnji razvoj inženjerskih profesija ili inženjerskih kompetencija uključujući inženjerske i druge sadržaje mogu biti ocjenjene kao kontinuirani profesionalni razvoj.

Sustav izdavanja *Inženjerskih iskaznica* nudi sustav dokumentiranja formalnog, neformalnog te informalnog obrazovanja i aktivnosti. Podnositelji zahtjeva mogu sami odabrati vrstu aktivnosti prilaganjem potrebnih dokaza (ako su primjenjivi).

Samo cjeloživotno obrazovanje koje je provedeno nakon priznatog A1 stupnja uzima se u obzir.

CPD aktivnosti mogu biti tehničke ili ne-tehničke prirode.

Vrste tehničkih aktivnosti prepoznate za potrebe inženjerskih iskaznica se dijele u četrnaest kategorija:

- a.) tečajevi i predavanja u tvrtki zaposlenika
- b.) obrazovanje izvan tvrtke zaposlenika
- c.) postdiplomski sveučilišni studij
- d.) inženjersko istraživanje
- e.) poučavanje ili instrukcije
- f.) djelovanje u profesionalnim inženjerskim udrugama
- g.) razvoj tehničkih propisa, kodova ili normi
- h.) tehnički pregledi/zadatci
- i.) sudjelovanje na kongresima, konferencijama ili konvencijama u struci,

- j.) priprema i održane prezentacije iz struke na konferenciji
- k.) priprema i tehničke publikacije u časopisima ili knjigama iz struke
- l.) proizvodnja, konstrukcija
- m.) tehnička kontrola kvalitete, ispitivanje ili evaluacija
- n.) koordinacija i upravljanje

Inženjeri vlasnici Inženjerske iskaznice moraju osigurati redovito dokumentiranje o CPD-u uredu za registraciju radi ažuriranja baze podataka. Pružanje informacija o CPD aktivnosti se može u bilo koje vrijeme, međutim preporuča se da se ažuriranje provodi nakon potpuno završene aktivnosti koja se prijavljuje. Podaci koje podnositelji moraju osigurati su:

- Ime i kontakt
- Članstvo u inženjerskoj udruzi u Hrvatskoj
- Za svaku vrstu CPD aktivnosti koja se želi prijaviti treba osigurati slijedeće:
 - datum/trajanje CPD aktivnosti (mjesec/godina)
 - naziv CPD aktivnosti
 - kratak opis CPD aktivnosti
 - trajanje aktivnosti u satima
 - dostavu dokumenata o prijavljenoj CPD aktivnosti

Inženjeri trebaju planirati svoje CPD aktivnosti po mogućnosti u skladu s identifikacijom potrebnim kompetencijama ili preporukama u svezi kvalifikacije ili vrste radnog mjesta. Ovaj izbor potrebnih kompetencija se može temeljiti na samoprocjeni temeljem kriterija, rubrika i elemenata unutar skupa potrebnih kompetencija.

Vrijednost u satima za svaku vrstu aktivnosti je utvrđena FEANI CPD politikom. Ovisi o inženjerima da prikupe što je moguće više sati obrazovanja.

Vrsta CPD-a	Maximalni broj sati	Komentar
1. Tečajevi i predavanja u tvrtki zaposlenika	Nema ograničenja	U predavaoni ili virtualnom okruženju
2. Poslijediplomski studij	Nema ograničenja	Ova aktivnost uključuje određenu vrstu procjene.
3. Tečajevi izvan tvrtke djelatnika	Nema ograničenja	Priznata institucija ili organizator obrazovanja

4. Aktivnosti u profesionalnim inženjerskim udrugama	Ograničenje od 15 sati u prosjeku godišnje	Može uključivati volonterski rad u odborima i stručnim tijelima; članstvo u postupcima akreditacije u visokom obrazovanju, CPD audite, mentorstvo kolegama za potrebe stjecanja iskustva; sudjelovanje u tehničkim odborima za izradu normi.
5. Tehnički pregledi i zadatci	Ograničenje od 5 sati u prosjeku godišnje	Mora biti u stanju pokazati kako je proširio/la znanja i vještine vezane uz struku.
6. Ažuriranje profesionalnog razvoja studiranjem	Ograničenje od 5 sati u prosjeku godišnje	Za sve provedene aktivnosti potrebno je pokazati kako je prošireno znanje i vještine vezane uz struku.
7. Priprema i održane prezentacije na konferenciji	Ograničenje od 10 sati u prosjeku godišnje	Samo prezentacije koje su prošle predhodnu recenziju (peer review)
8. Priprema i tehničke publikacije u časopisima ili knjigama iz struke	Ograničenje od 20 sati u prosjeku godišnje	Publikacije moraju biti u vezi sa strukom
9. Učenje ili poučavanje u CPD aktivnostima vezanim uz struku	Ograničenje od 15 sati u prosjeku godišnje	Ovo vrsta CPD-a se ne odnosi na inženjere koji su djelatnici u visokom obrazovanju ili znanstvenim institucijama
*Maksimalni broj sati u stavkama 1.,2.,i 3. je 25 sati u prosjeku godišnje		

Ovisno od količine CPD-a u godini dana razlikuju se kategorije upisane u Inženjersku karticu i to su:

- C1** Inženjer s manje od 20 sati CPD godišnje
- C2** Inženjer sa 20 do 40 sati CPD godišnje
- C3** Inženjer sa više od 40 sati CPD godišnje

Zahtjev za dokumentaciju kategorija C1, C2 ili C3 je zadovoljen ažuriranjem baze podataka.

Kao dodatak aktivnostima učenja unutar tehničke struke, kandidati također mogu uključiti aktivnosti učenja **ne-tehničkih struka**.

Kategorije su u skladu sa Europskim okvirom kompetencija za Cjeloživotno učenje. Kategorije su:

- strani jezici
- digitalna znanja
- društveni i civilni sadržaji
- poduzetništvo
- ostalo

Dokumentacija o aktivnostima u stjecanju ovih znanja vrši se na isti način kao i kod tehničkih stjecanja znanja. Međutim, samoprocjena ovdje temelji se na različitim europskim okvirima kompetencija. Za područja kompetencija za koje specifični kompetencijski okvir nije (još) dostupan, samoprocjena se temelji na Europskim kvalifikacijskom okviru (EQF).

8. Valjanost

Rok važenja Inženjerskih iskaznica je 10 godina.

9. Isključenja i brisanja iz registra

Ukoliko se utvrdi da je podnositelj prijave dostavio lažne informacije ili je utvrđeno kršenje etičkih načela inženjerske struke Odbor za registraciju zadržava pravo brisanja takve osobe iz Registra. U tom slučaju svi pohranjeni podatci osobe se blokiraju i brišu. Isprave koje su još eventualno valjane moraju biti vraćene ili uništene uz dokaz o uništenju.



Inženirska izkaznica

Registracijski odbor SI

OSNUTEK

Zahteve in postopkovna načela

za pridobitev *Inženirske izkaznice* in vnos v
Slovenski register inženirjev

Uvodna izjava:

Naslednje zahteve in postopkovna načela urejajo postopke odločanja v zvezi s podeljevanjem *Inženirske izkaznice* in sprejemom v *Slovenski register inženirjev*. Zahteve in načela obenem služijo kot pregledna navodila za prosilce za ocenjevanje možnosti za uspeh njihove vloge in za razumevanje postopkov odločanja *Registracijskega odbora*.

1 Uvod

Inženirska izkaznica je strokovna izkaznica, ki jo je možno pridobiti prostovoljno pri strokovnih združenjih, ki sodelujejo pri zasnovanem konceptu, in z njim povezan vpis v *Slovenski register inženirjev*. Namen izkaznice je zagotoviti enotno in priznano obliko po vsej Evropi za dokumentacijo ustreznih kvalifikacij, ki so pomembne za inženirsko stroko. O registraciji posameznika v *Slovenski register inženirjev* odloča *Registracijski odbor*, ki deluje v imenu nacionalne strokovne organizacije *SIZ*.

Ta priročnik služi kot osnova za odločitve *Registracijskega odbora*. Določa standarde in načine dodeljevanja *Inženirske izkaznice* in vpis v *Slovenski register inženirjev*.

2 Vloga

Vloge za *Inženirsko izkaznico* je možna oddati le z elektronsko prijavo in vsi potrebni dokazi morajo biti priloženi kot elektronski dokumenti. Da bi preprečila zlorabo in napačno predstavitev, mora vlagatelj podati izjavo, da

- so vsi podatki pravilni in popolni,
- predloženi dokumenti ustrezajo izvirnim dokumentom.

3 Predpogoji za podelitev *Inženirske izkaznice* in sprejem v *Slovenski register inženirjev*

Predpogoj za podelitev *Inženirske izkaznice* je uspešen zaključek osnovnega inženirskega študija na akreditiranem inženirskem programu slovenskih univerz. Prosilec mora biti upravičen do naziva "inženir" v skladu z *Zakonom o strokovnih in znanstvenih nazivih*.

Temeljni inženirski programi slovenskih univerz so:

- univerzitetni, ki vodijo k diplomu dipl. inž. stroke (UN) in/ali mag. inž. stroke in
- strokovni, ki vodijo k diplomu dipl. inž. stroke (VS).

V posebnih primerih lahko *Registracijski odbor Inženirsko izkaznico* podeli tudi diplomantom inženirskih programov tujih univerz. Vloge bo *Registracijski odbor* v tem primeru obravnaval posamezno. Vstopni pogoj za obravnavo vloge je, da je prosilec pridobil del svoje strokovne kvalifikacije (študija, poklicne izkušnje ali element vseživljenjskega strokovnega izobraževanja na področju inženirstva) v Sloveniji.

4 Razvrstitev inženirskih študijev

Razvrstitev inženirskih študij (A) temelji na novem evropskem sistemu visokošolskega izobraževanja (bolonjski sistem). Vsebuje tri kategorije, ki ustrezajo trem ciklom Evropskega visokošolskega sistema:

- A1** ustreza prvemu ciklu z zaključkom FCD (prva bolonjska stopnja),
- A2** ustreza drugemu ciklu z zaključkom SCD (druga bolonjska stopnja),
- A3** ustreza tretjemu ciklu z zaključkom TCD (tretja bolonjska stopnja).

Stopnje iz starih študijskih programov se ustrezno uvrstijo v enega od treh ciklov. Za slovenski visokošolski sistem tako obstaja:

- A1** dodiplomski univerzitetni inženirski programi na univerzah in dodiplomski visokošolski strokovni programi na univerzah in samostojnih visokošolskih zavodih z nazivi dipl. inž. stroke (UN) ali dipl. inž. stroke (VS);
- A2** magistrski inženirski programi na univerzah z nazivom mag. inž. stroke;
- A3** doktorski programi na univerzah z nazivom doktor znanosti iz področja – stroka, dr..

5 Priznavanje študija

Za olajšanje postopka priznavanja je pripravljen nacionalni seznam sprejetih inženirskih študijskih programov (A1 in A2), ki ga *Registracijski odbor* stalno vzdržuje in razvija. Študijske programe, ki so že vključeni na ta seznam, odbor samodejno upošteva pri preučevanju vloge. V vseh drugih primerih se inženirski programi posredujejo komisiji *Registracijskega odbora* v preverbo in tako se seznam prepoznanih programov nenehno razširi.

Da bi ocenili profesionalno usmerjenost programa v inženirstvo, se uporabljajo deskriptorji učnih izidov okvirnih standardov *EUR-ACE®*, kot tudi predmetne zahteve, ki jih *FEANI* določi za inženirski programe, tudi z ozirom na mednarodno priznanje.

Za odločanje se lahko uporabijo naslednji dokumenti:

1. diploma,
2. dodatek k diplomu,
3. prepis zapisov,
4. pregled kurikuluma,
5. objavljena poročila o akreditaciji.

Priznanje A3 zahteva doktorat iz inženirske stroke.

Prepoznavanje tujih študijskih smeri se vedno opravi s posamičnim preučevanjem zadeve v *Registrskem odboru*.

6 Priznavanje poklicnih izkušenj

Strokovne izkušnje (B) niso predpogoj za pridobitev *Inženirske izkaznice*; tudi diplomanti brez strokovnih izkušenj lahko pridobijo *Inženirsko izkaznico*. Vendar pa je predpogoj za dokumentacijo B uspešno izpolnjen pogoj kategorije A.

Upoštevajo se le poklicne izkušnje, pridobljene po priznani A1 stopnji.

Delo kot inženir se lahko dokumentira pod kategorijo strokovne izkušnje B. Tabela inženirskih del, ki jo definira in uporablja FEANI, lahko služi kot referenca za priznavanje poklicnih izkušenj. *Registracijski odbor* bo ta seznam inženirskih del in funkcij še naprej razvijal na podlagi predloženih referenčnih primerov.

Prosilci morajo predložiti dokazilo o zaposlitvi ali, če je to možno, potrdilo, ki ga izda delodajalec.

Obstajajo tri kategorije:

- B1** zaposleni v zasebnem sektorju,
- B2** zaposleni v javnem sektorju,
- B3** samozaposlene osebe

Registracijski odbor odloči o vnosu B1 do B3 na podlagi dokumentov, ki jih predloži vlagatelj. Predpogoj za podelitev B1, B2 ali B3 na *Inženirski izkaznici* je dokaz o najmanj dveh (2) letih delovnih izkušenj v posamezni kategoriji.

7 Priznavanje stalnega strokovnega spopolnjevanja (CPD)

Stalno izobraževanje ni predpogoj za pridobitev *Inženirske izkaznice*, vendar ga je mogoče dokumentirati. Usposabljanje lahko zajema vsebinsko specifične in interdisciplinarne ter multidisciplinarne teme. Vse poklicne in nad-strokovne kvalifikacije za vzdrževanje in nadaljnji razvoj inženirstva ali inženirskih kompetenc so priznane kot stalni strokovni razvoj.

Sistem inženirskih izkaznic ponuja sistem za dokumentiranje formalnih in neformalnih ali priložnostnih učnih dejavnosti. Vlagatelji lahko sami izberejo vrsto dejavnosti usposabljanja, ki so jo opravili, in dodajo informacije in dokaze (če so dostopni).

Upoštewane so le nadaljevalne izobraževalne dejavnosti, ki so bile zaključene po priznani stopnji A1.

Dejavnosti CPD so lahko tehnične ali netehnične narave.

Vrste tehničnih učnih dejavnosti, priznanih za Inženirsko izkaznico, štirinajst kategorij:

- a.) usposabljanje v podjetju,
- b.) zunanje usposabljanje,
- c.) podiplomsko – akademsko usposabljanje,
- d.) inženirsko raziskovanje,
- e.) poučevanje ali inštruiranje,
- f.) sodelovanje s strokovnimi inženirskimi organizacijami,
- g.) razvoj tehničnih predpisov, kodeksov ali normativov,
- h.) tehnični obisk / ekskurzije,
- i.) udeležba na konferenci, kongresu ali konvenciji, povezani s stroko,
- j.) priprava in predstavitev tehničnega gradiva,
- k.) priprava in objava v strokovni publikaciji,
- l.) izdelava, proizvodnja, konstruiranje,

m.) tehnični nadzor kakovosti, pregled ali vrednotenje,

n.) usklajevanje in upravljanje.

Posamezen inženir mora redno vzdrževati svoj zapis CPD aktivnosti v uradu za *Inženirsko izkaznico*, tako da posodablja svoje podatke v zbirki podatkov. Zagotavljanje informacij o aktivnostih CPD se lahko opravi kadarkoli, vendar je priporočljivo, da se dokazi pošljejo šele potem, ko je dejavnost v celoti končana. Informacije, ki jih morajo predložiti vlagatelji, so:

- ime in kontaktni podatki,
- član nacionalnega inženirskega združenja,
- za vsako vrsto sprejetih dejavnosti CPD mora imeti opis dejavnosti CPD z naslednjimi podatki:
 - datum / trajanje dejavnosti CPD (mesec / leto),
 - ime dejavnosti CPD,
 - kratek opis aktivnosti CPD,
 - trajanje dejavnosti v urah,
 - dokazila o dejavnosti CPD.

Inženirji naj načrtujejo svoje dejavnosti CPD po možnosti v skladu z opredelitvijo zahtevanih kompetenc ali priporočil v ustreznem profilu kvalifikacije ali delovnega mesta. Ta izbira potrebnih kompetenc lahko temelji na samoiniciativi inženirja glede na merila, rubrike ali elemente v okviru potrebnih kompetenc.

Vrednost ur za nekatere, vendar ne vse vrste, je določena s pravilnikom FEANI CPD (glej tabelo spodaj). Na inženirju je, da opravi čim več ur usposabljanja.

Vrsta CPD	Največje število opravljenih ur	Opombe
1. Predavanja in vaje v podjetju	Ni omejitev*	Opravljene v predavalnici ali virtualnem okolju
2. Formalna podiplomska akademska izobraževanja	Ni omejitev*	Vse tovrstne aktivnosti vključujejo določene oblike preverjanj
3. Zunanji tečaji usposabljanja	Ni omejitev*	Priznana organizacija ali ponudnik usposabljanja

4. Aktivno sodelovanje s strokovnimi inženirskimi organizacijami	Meja je povprečno 15 ur na leto	Vključuje prostovoljno delo v upravnih odborih in komisijah; članstvo v visokošolskih akreditacijskih komisijah; sodelovanje v CPD preverbah; mentorstvo kolegu za pridobitev delovnih izkušenj; sodelovanje v snovanju in reviziji tehničnih standardov.
5. Strokovni obiski ali druge zunanje naloge	Meja je povprečno 5 ur na leto	Mora biti sposoben dokazati, kako je razširil znanje in veščine, povezane s stroko.
6. Posodabljanje strokovnega razvoja, ki temelji na osebnem študiju	Meja je povprečno 5 ur na leto	Za vsako opravljeno učno dejavnost je treba dokazati, kako sta se z njo razširila znanje in spretnosti, povezani s stroko.
7. Priprava in predstavitev tehničnega gradiva na konferenci	Meja je povprečno 10 ur na leto	Upoštevajo se članki, ki so bili recenzirani pred objavo
8. Priprava in publikacija v reviji oziroma knjigi	Meja je povprečno 20 ur na leto	Objava mora biti povezana s stroko
9. Poučevanje ali inštruiranje pri dejavnostih, povezanih s CPD v stroki	Meja je povprečno 15 ur na leto	Ta vrsta ni predvidena za inženirje, ki so člani visokošolskih ali raziskovalnih ustanov
* Najvišja vsota ur za 1., 2. in 3. je povprečno 25 na leto.		

Odvisno od količine CPD aktivnosti, ki se opravijo letno, so kategorije navedene v inženirski izkaznici naslednje:

- C1** inženir z manj kot 20 urami CPD letno,
- C2** inženir z 20 do 40 ur CPD letno,
- C3** inženir z več kot 40 ur CPD letno.

Zahteva za dokumentacijo C1, C2 ali C3 je izpolnjena s posodobitvijo baze podatkov.

Poleg tehničnih učnih aktivnosti lahko prosilci vnesejo tudi v netehnične učne dejavnosti. Razpoložljive kategorije temeljijo na Evropskem okvirju za usposobljenost za vseživljenjsko učenje. Vključujejo:

- tuji jeziki,
- digitalna pismenost,
- družbena in državljanska vzgoja,
- podjetništvo,
- drugo.

Dokumentacija učne dejavnosti poteka na enak način kot pri tehničnih učnih dejavnostih, vendar pa samoocenjevanje temelji na različnih evropskih okvirjih usposobljenosti. Za področja kompetenc, v katerih poseben okvir kompetenc (še) ni na voljo, bo samoevalvacija temeljila na evropskem ogrodju kvalifikacij (EQF).

8 Veljavnost

Veljavnost *Inženirske izkaznice* je omejena na 10 let.

9 Izključitev in izbris iz registra

Če se ugotovi, da je prosilec posredoval napačne podatke ali se ugotovi, da krši etična načela inženirske stroke, si *Registracijski odbor* pridržuje pravico izbrisa osebe iz registra. V tem primeru so vsi shranjeni podatki osebe blokirani in izbrisani. Vsaka identifikacija, ki je morda še veljavna, mora biti vrnjena ali dokazano uničena.



Engineering Card

Registrační komise CZE

NÁVRH

Požadavky a procedurální zásady

pro přidělení *Engineering Card* a související
přijetí do *Českého registru inženýrů*

Předmluva:

Níže uvedené požadavky a procedurální zásady upravují rozhodovací praxi v oblasti přidělování *Engineering Card* a přijetí do Českého registru inženýrů. Současně slouží jako transparentní pokyny pro žadatele k posouzení úspěchu přijetí svých žádostí a pro pochopení rozhodovacích postupů registrační komise.

1 Úvod

Engineering Card představuje profesní kartu inženýra, o kterou lze dobrovolně požádat zajišťující asociaci, která stojí za tímto konceptem, jakož i související zápis v Českém registru inženýrů. Cílem je zajistit v celé Evropě jednotný a uznávaný formát pro dokumentaci příslušných kvalifikací pro výkon inženýrských profesí. O přijetí do Českého registru inženýrů rozhoduje registrační komise, jež jedná jménem dané asociace.

Tato příručka slouží jako podklad pro rozhodování registrační komise. Stanoví standardy a způsoby udělování *Engineering Card* a zápisu do *Českého registru inženýrů*.

2 Žádost

Žádosti o *Engineering Card* je možné podávat pouze elektronicky. Všechny potřebné podklady musí být přiloženy jako elektronické dokumenty. Aby se předešlo zneužití a překroucení, musí žadatel učinit čestné prohlášení o tom, že

- všechny údaje jsou správné a úplné,
- předložené dokumenty odpovídají originálním dokumentům.

3 Předpoklady pro udělení *Engineering Card* a přijetí do Českého registru inženýrů

Předpokladem pro přidělení *Engineering Card* je úspěšné absolvování základního inženýrského studia na české univerzitě akreditované státem. Žadatel musí být rovněž oprávněn používat titul "inženýr" v souladu s právními předpisy České republiky.

Základní inženýrská studia na českých vysokých školách jsou:

- magisterské studium vedoucí k získání *diplomu* s titulem Ing. a Ing. Arch.
- bakalářské studium s titulem Bc.

Ve zvláštních případech může být *Engineering Card* udělena absolventům inženýrských studií na zahraničních univerzitách. Příslušné žádosti v každém případě podléhají případovému přezkoumání registrační komisí a zpracovávají se pouze v případě, že žadatel získal část své odborné kvalifikace (studium, odborná praxe nebo další inženýrské vzdělávání) v České republice.

4 Klasifikace inženýrských studií

Klasifikace inženýrských studií (A) je založena na novém evropském systému vysokoškolského vzdělávání (boloňský systém). Obsahuje tři kategorie odpovídající třem cyklům ECTS:

- A1** odpovídá 1. cyklu s dokončeným FCD (titul prvního cyklu)
- A2** odpovídá 2. cyklu s dokončeným SCD (titul druhého cyklu)
- A3** odpovídá 3. cyklu s dokončeným TCD (titul třetího cyklu).

Tituly ze starých studijních oborů jsou podle toho zařazeny do jednoho ze tří cyklů. Pro český vysokoškolský systém pak platí toto přiřazení:

- A1** bakalářské inženýrské obory s titulem Bc.
- A2** magisterské inženýrské obory s tituly Ing. a Ing. Arch.
- A3** doktorandské studium s titulem Ph.D. a CSc.

5 Uznávání studií

Pro usnadnění procesu uznávání je připraven národní seznam akceptovaných inženýrských studií (A1 a A2). Ten je registrační komisí průběžně udržován a dále rozvíjen. Studia, která jsou v tomto seznamu již zahrnuta, pak kancelář při zkoumání dokumentů k žádosti bere automaticky v úvahu. Ve všech ostatních případech jsou jednotlivé obory předkládány registrační komisi k prověření. Seznam uznávaných oborů se neustále rozšiřuje.

Za účelem posouzení profesní orientace oboru jakožto inženýrského oboru se používají jak deskriptory učebních výstupů rámcových standardů EUR-ACE®, tak i požadavky na předmět definované FEANI pro inženýrský obor, a to i s ohledem na mezinárodní uznání.

Pro rozhodování lze použít následující dokumenty:

1. Diplom
2. Dodatek k diplomu
3. Výpis záznamů známek z jednotlivých zapsaných předmětů
4. Seznam všech předmětů studijního oboru
5. Zveřejněné zprávy Akreditační komise

Uznání A3 vyžaduje doktorát v inženýrském oboru.

Uznání zahraničních studijních oborů se vždy provádí individuálním případovým přezkoumáním ze strany registrační komise.

6 Uznávání profesní praxe

Profesní praxe (B) není předpokladem pro získání *Engineering Card*. Dokonce i absolventi bez profesní praxe mohou *Engineering Card* získat. Předpokladem pro dokumentaci B je však úspěšné udělení kategorie A.

Zohledněna je pouze profesní praxe získaná podle uznaného stupně A1.

Práci inženýra lze zdokumentovat v kategorii profesní praxe B. Tabulka inženýrských funkcí používaná organizací FEANI slouží jako pomůcka pro uznávání profesních zkušeností. Registrační komise bude tento seznam dále rozšiřovat, na základě předložených referenčních případů.

Žadatelé musí předložit doklad o zaměstnání nebo případně osvědčení potvrzené zaměstnavatelem.

Existují tři kategorie:

- B1** Zaměstnanci soukromého sektoru
- B2** Zaměstnanci veřejného sektoru
- B3** Osoby samostatně výdělečně činné

Registrační komise rozhoduje o přiřazení do B1 až B3 na základě dokumentů předložených žadatelem.

Předpokladem pro udělení B1, B2 nebo B3 na *Engineering Card* je doklad o minimálně dvouleté odborné praxi v příslušné kategorii.

7 Uznávání celoživotního profesního vzdělávání (CPD)

Celoživotní vzdělávání není předpokladem pro získání *Engineering Card*. Může však být zdokumentováno. Celoživotní profesní vzdělávání může zahrnout technická, mezioborová a průřezová témata. Všechna technická a průřezová kvalifikační vzdělávací opatření sloužící pro udržování a zvyšování kvalifikace inženýrů, jsou uznávána jako celoživotní profesní vzdělávání.

System Engineering Card nabízí systém dokumentace formálního vzdělávání, neformálního vzdělávání a informálního učení. Žadatelé si mohou zvolit druh vzdělávací činnosti, které se věnují a doplnit informace o této aktivitě a její zdokumentování (je-li to předmětné).

Zohledněny jsou pouze vzdělávací aktivity, které byly ukončeny po uznání stupně A1.

Aktivity v oblasti CPD mohou být technického nebo netechnického charakteru.

Pro Engineering Card je uznáváno čtrnáct kategorií **technických/odborných vzdělávacích aktivit**:

- a.) firemní školení
- b.) externí školení
- c.) postgraduální akademické
- d.) inženýrský výzkum
- e.) výuka nebo instruktáž
- f.) práce v profesní inženýrské organizaci
- g.) rozvíjení odborných předpisů, zásad nebo standardů
- h.) odborná exkurze/ odborný úkol
- i.) účast na relevantních konferencích, kongresech nebo sjezdech
- j.) vyhotovení a prezentace odborné práce
- k.) publikování v odborných časopisech
- l.) výroba, konstrukce
- m.) řízení kvality, kontrola nebo hodnocení
- n.) koordinace a řízení

Inženýr by měl kanceláři odpovědné za ověřování a vydávání Engineering Card pravidelně předkládat své záznamy o CPD tak, že bude aktualizovat své informace v databázi. Informace o aktivitách v oblasti CPD lze poskytovat kdykoliv. Doporučuje se však, aby byly zasílány až po úplném dokončení příslušné vzdělávací aktivity. Informace, které musí žadatelé poskytnout, jsou:

- Jméno a kontaktní údaje
- Členství v národním inženýrském svazu
- U každého typu akceptované aktivity v oblasti CPD bude uveden její popis a uvedeny následující informace:
 - Datum/trvání aktivity v oblasti CPD (měsíc/rok)
 - Název aktivity v oblasti CPD
 - Stručný popis aktivity v oblasti CPD
 - Délka trvání aktivity v hodinách
 - Podklady k aktivitě v oblasti CPD

Inženýři by měli plánovat své aktivity v oblasti CPD nejlépe v souladu se stanovenými

požadovanými nebo doporučenými kompetencemi v příslušném kvalifikačním nebo pracovním profilu. Tento výběr požadovaných kompetencí může být založen na vlastním sebehodnocení inženýra na základě jednotlivých kritérií, kategorií nebo prvků v rámci požadovaného souboru kompetencí.

Hodnota hodin pro některé typy (nikoliv pro všechny) je stanovena zásadami FEANI pro CPD (viz tabulka níže). Je na inženýrovi, aby měl co nejvíce hodin školení/výcviku.

Typ CPD	Maximální hodnoty hodin	Komentář
1. Firemní školení nebo přednášky	Žádný limit*	Organizovány v přednáškové místnosti nebo ve virtuálním prostředí.
2. Formální postgraduální akademické kurzy	Žádný limit*	Všechny takové aktivity budou zahrnovat určitou formu hodnocení.
3. Externí vzdělávací kurzy	Žádný limit*	Uznávaná instituce nebo organizátor výcviku.
4. Služby ve specializovaných inženýrských organizacích	Limit 15 hodin v průměru za rok	Může zahrnovat dobrovolnou činnost v radách a výborech, součást akreditačních návštěv vysokoškolského vzdělávání, pomoc při auditech v oblasti CPD, poradenství pro kolegy za účelem získání pracovních zkušeností, příspěvky v rámci práce na technických normách.
5. Odborné exkurze nebo odborné úkoly	Limit 5 hodin v průměru za rok	Musí být schopen/schopna prokázat, jak rozšířil/a své znalosti a dovednosti spojené s touto profesí.
6. Aktualizace profesního rozvoje založeného na individuálním studiu	Limit 5 hodin v průměru za rok	U každé vzdělávací činnosti je nutné prokázat, jak rozšířila znalosti a dovednosti spojené s touto profesí.
7. Vypracování a prezentace odborného příspěvku na konferenci	Limit 10 hodin v průměru za rok	Příspěvky hodnocené kolegy před jejich publikací.
8. Vypracování příspěvku a publikace v odborném časopise nebo v knize	Limit 20 hodin v průměru za rok	Publikace musí souviset s touto profesí

9. Výuka nebo instruktáž u aktivit v oblasti CPD související s danou profesí	Limit 15 hodin v průměru za rok	Tento typ neplatí pro inženýry, kteří jsou členy vysokých škol nebo výzkumných institucí
* Maximální součet hodin u bodů 1, 2 a 3 je 25 v průměru za rok		

V závislosti na rozsahu CPD za rok pak kategoriemi uvedenými na Engineering Card jsou:

C1 inženýr s méně než 20 hodinami CPD za rok

C2 inženýr s 20 až 40 hodinami CPD za rok

C3 inženýr s více než 40 hodinami CPD za rok

Požadavek na dokumentaci C1, C2 nebo C3 je splněn aktualizací databáze.

Kromě odborných vzdělávacích aktivit se žadatelé mohou také účastnit **neodborných vzdělávacích aktivit**. Dostupné kategorie vycházejí z evropského rámce kompetencí pro celoživotní vzdělávání¹. Jsou to tyto kategorie:

- cizí jazyky
- digitální oblast
- společenská a občanská oblast
- podnikatelská oblast
- ostatní

Dokumentování vzdělávacích aktivit se provádí stejným způsobem jako u technických vzdělávacích aktivit. Sebehodnocení však vychází z různých evropských rámců kompetencí. Pro oblast kompetencí, v nichž není (dosud) k dispozici specifický rámec kompetencí, pak sebehodnocení vychází z evropského rámce kvalifikací (EQF).

8 Platnost

Doba platnosti *Engineering Card* je stanovena na 10 let.

9 Vyloučení a výmaz z registru

Pokud se zjistí, že žadatel poskytl nepravdivé informace nebo že porušuje etické principy povolání inženýra, registrační komise si vyhrazuje právo vymazat takovou osobu z registru. V takovém případě jsou všechny uložené údaje osoby zablokovány a smazány. Jakákoliv identifikace, která může být stále platná, musí být vrácena nebo prokazatelně zničena.

¹ Úřad pro oficiální publikace evropských společenství (2007): Klíčové kompetence pro celoživotní vzdělávání – evropský rámec. Lucembursko.