Bezirksregierung Köln
EU-Geschäftsstelle
Wirtschaft + Berufsbildung

THEME –
a European Project in Vocational Education and Training

Impressum

Bezirksregierung Köln
Division 4: Schools, Education
Section 45:
European Agency for Vocational Education and Training
Phone: +49 (0) 221/147-2361
www.brk.nrw.de/europa

Head of the European Agency
for Vocational Education and Training:
Hartmut Müller
hartmut.mueller@brk.nrw.de
Phone: +49 (0) 221/147-2519
Fax: +49 (0) 221/147-2893

Published by:
Bezirksregierung Köln
Zeughausstraße 2-10
50667 Köln
Phone: +49 (0) 221/147-0
Fax: +49 (0) 221/147-3185
poststelle@brk.nrw.de
www.brk.nrw.de

Current to: September 2015

Lifelong Learning Programme

This project has been funded with support from the European Commission.
This publication [communication] reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Project THEME
Supporting Occupational Mobility – a European Project in Vocational Education and Training

Final Documentation of the Project THEME: Transfer of ECVET Instruments into the Fields of Trade, Hospitality, Electrical Engineering/Electronics and Mechatronics

Preface

The intended increase of mobility in vocational education and training (VET) in Europe of up to 6% until 2020 requires great effort:

- VET students and enterprises have to be convinced of the benefit of mobility.
- The implementation of mobilities is time consuming for all involved parties.
- VET systems vary broadly and often it is difficult to define the content of an internship abroad due to national differences in training programmes.
- There is no standardized procedure with which to evaluate VET students' mobilities.
- Difficulties arise in the process of validation and recognition in home countries and training companies.
- The quality of internships remains the foremost priority for long-term acceptance, especially in the working world.

Experts in VET from Finland, Germany, Italy, Lithuania, The Netherlands, Slovenia, and Spain worked together on the project THEME – Transfer of ECVET Instruments into the Fields of Trade, Hospitality, electrical engineering/electronics and mechatronics – in order to improve the mobility process. Hence Competence Matrices in four occupational fields covering 48 different vocational trainings have been revised and concrete competence based Learning Outcomes have been developed. The matrices offer a widely accepted basis to agree on learning units and Learning Outcomes in different companies or countries. Partial competences or Learning Outcomes were developed in order to specify the content of an internship. Based hereupon, assessment tools were developed which help to validate internships as a requisite for their recognition throughout Europe and at the same time contribute to ensure quality.

A database was created which is supposed to facilitate the practical organisation and management of VET mobilities. All products developed within the project have been integrated and can easily be used. Moreover, it generates the necessary ECVET documents and assessment tools.

All instruments were tested and evaluated by VET students' mobilities among the project partners. In total 128 mobilities took place.

Thanks to the intensive exchange of VET students and the close collaboration among all partners. During the project a network was built which guarantees future Europe-wide cooperation.

This publication informs in detail about background and aims and main achievements of the project. It explains the different THEME instruments that facilitate mobilities and describes the experiences and impacts in the different occupational sectors.

The project partners are convinced the project will not end with the end of funding. We are planning to continue working on the projects' results and hope to convince stakeholders regarding the successful instruments.

Dr. Folene Nannen-Gethmann and Thorsten Noelle, project coordinators

European Agency for Vocational Education and Training,
Cologne Government Regional Office

September 2015

Contents

1. Background, Aims, Objectives and Main Achievements

by Susanna Casellato, Italy and Dr. Folene Nannen-Gethmann, Germany

The European Commission has a clear policy goal of fostering students and workers mobility in line with the Lisbon objectives of improving employability.

The number of students in higher education who are participating in external studies is steadily increasing, whereas the overall percentage of students in vocational education and training (VET) who are engaged in international mobility is still quite low. According to the European Commission VET students' mobility shall increase to six percent until 2020, actually it is below three percent.

Europe-wide the VET mobility is still restrained by huge differences between the training systems and a lack of transparency. Mutual recognition of the internship performances is still insufficient and the organisation of internships abroad is bureaucratic and time-consuming. Also it requires a lot of paper work for obtaining funds and other means of support.

For achieving the overall goals, in Europe the following efforts are important:

- Ensuring that transitions on the labour market take place smoothly, contribute positively to career development and serve the needs of employers for a good match
- Achieving transparency in the qualification structures of the educational systems and of the workforce
- Harmonising Learning Outcomes' validation and recognition practices by implementing an effective ECVET system
- Ensuring a good quality of mobilities
- Facilitating the organisation of VET mobilities

The THEME project has addressed the above-mentioned issues and needs:

- The communication between web providers, students and companies lead to a higher transparency.
- The agreements on competences to be acquired in VET mobility between VET providers lead to a higher quality of mobilities.
- It uses and adopts ECVET instruments in order to improve recognition and validation of internships.
- It ensures the quality of international mobility by assessment instruments which are easily to handle.
- It facilitates mobility management by a database.

Through the transfer and adaptation of some innovative elements of the previous LLP Leonardo da Vinci Transfer of Innovation projects VQTS (LLP-LdV-TOI-2007-AT-0017), TRIFT (DE/10/LLP-LdV/TOI/147307); ECMO (DE/10/LLP-LdV/TOI/147306) and E.R.M.E.S. (LLP-LdV-TOI-11-IT-592) the THEME partnership has acted as "mobility facilitator" building on a provision of a web-based tool (THEME Smart Mobility Tool, below: TSMT) which simplifies all the tasks related to the management of international mobility projects. It provides a range of support management tools and resources to students, host companies and schools/VET providers which they would have otherwise to develop independently.

The THEME project has proposed innovative approaches and processes encompassing the challenges of designing and implementing a user-friendly and flexible online tool by setting up synergy effects among these projects and adopting a multi-sectoral approach in planning and managing mobility projects.

THEME partnership has brought together twelve partners from seven different countries (Finland, Germany, Italy, Lithuania, the Netherlands, Slovenia, Spain) and has been constructed in order to achieve the most efficient synergy

effects among the different partners. This partnership includes the necessary expertise to successfully reach the goals of the project. Each partner has introduced a specific competence and this has been strongly reflected in the consortium's work. An implicit enabling factor has been the diverse nature of the partners involved and the composition of the THEME partnership. The project greatly benefits from the different perspectives, the diversity, various viewpoints and backgrounds e.g. thematic, professional, attitudinal and geographical.

Starting from the high-quality experiences possessed by partners in organising and managing mobility projects and from the current configuration of E.R.M.E.S. Mobility Portal developed by Fondazione Centro Produttività Veneto with other European partners, new functionalities have been implemented in order to adapt the services mainly according to quality standards and ECVET operational framework and technical specifications as well as specific requirements which are further highlighted in the testing phase by the end-users.

For this specific purpose, dedicated work packages have aimed at:

- Sharing and formalizing a functional working methodology for the management of the mobility experiences and identifying additional supporting services
- Identifying and defining quality standards of international mobility activities regarding contents and management procedures. These standards should be compatible with the requirements of the European Qualification Framework (EQF) and the ECVET process.
- Planning the appropriate corrective actions targeted at the integration/evolution of the existing architecture through solutions and open-source components with a perspective of systemic simplicity, expandability, scalability, interoperability and user-friendliness
- Implementing the functionalities intended for a high customization and internationalization

In order to tackle the heterogeneity of the descriptive elements and contents of the mobility projects and to allow the transparency and recognition of the Learning Outcomes acquired during the mobility experience abroad, the mobility portal developed in the E.R.M.E.S. project uses formats to describe occupational profiles or units of Learning Outcomes according to EQF and ECVET recommendations.

In the THEME project a different approach has been adopted to overcome the incomparability of qualifications and training programmes in the different partners' countries by identifying similarities and differences through core work tasks of specific occupational fields (mechatronics, electrical engineering/electronics, trade and hospitality).

Based upon the E.R.M.E.S. experience and feedback from the usability-testing, the THEME partnership adopted a different outcome-oriented learning unit approach by using the VQTS matrix as framework. The model was developed in the European Project „VQTS" (Vocational Qualification Transfer System) and was further developed in the Lifelong Learning project „VQTS II" (Luomi-Messerer/Markowitsch (2006) and Luomi Messerer (2009)).

The THEME Smart Mobility Tool (TSMT) is based on Competence Matrices and offers a database for the easier management of VET mobilities.

EU-Geschäftsstelle Wirtschaft und Berufsbildung der Bezirksregierung Köln (EUGES) as project coordinator has ensured the overall good quality management of the project during its implementation as it has a long-lasting and extensive experience acting as coordinator or partner in EU-funded projects related to mobility strategies and practices. Many of the core partners already collaborated with EUGES in other LLP LdV projects thus developing a strong mutual trust.

Dissemination and valorisation have been considered central to the success of the THEME project. Much time and effort has been and is still currently dedicated to dissemination and valorisation activities consistent with the main objective to build consensus and ensure visibility and wide dissemination of the results and outcomes of THEME to relevant stakeholders in each partner country and to a wider network of EU partners.

For making the project's results visible to a wide audience, THEME partnership has set up a solid dissemination strategy starting from the very beginning of the project with the aim of communicating and promoting the main project results among all the potential users and institutions at all levels (local, regional, national and supranational). Furthermore, the dissemination strategy has been intended at developing a response mechanism between the partnership and the various public and private stakeholders, providing the necessary assistance, collecting useful feedback and providing the core partners with processes results, and thus, manage to build a framework for sustainable deployment at European level.

In addition to the above quoted „tangible" outcomes, the two-years project experience has yielded several immaterial achievements and lessons learnt including a better understanding of the partners' scenarios, contexts and requirements for facilitating international learning mobility through improved services and support infrastructures.

The applied model of analysing and presenting the different national portraits of learning mobility policies and strategies as well as sharing emerging findings and discussing key elements arise from the piloting of TSMT has been a very intense learning process for the partnership, challenging each other's ideas and understandings, as it has not only introduced new perspectives but also question existing practices and procedures in the partners institutions and national systems. In this perspective, the challenges in reaching the agreed quality standards can be seen as a part of the learning path which has mobilised great commitment and dedication from all partners.

It has been a rewarding experience cooperating in the project and partners have enjoyed mutual benefits in the partnership. Furthermore, all partners are committed to establish and participate also in nationally-based strategic partnership with public and private stakeholders in order to strengthen outcomes valorisation. Thus project results will have not only EU basis within the project partnership but will be transferred to national systems and transnational mobility policies and practices.

As a matter of fact, as a result of THEME project, the partnership might result in future opportunities and exploitation possibilities, such as the sharing and customization of transnational mobility opportunities and tests beyond the project time-frame.

2. THEME Instruments Developed to Facilitate Mobilities

by Dr. Folene Nannen-Gethmann, Germany

The THEME project not only wants to facilitate mobilities but at the same time to ensure their high quality and their Europe-wide valorisation and recognition. Therefore it is based on the ECVET process and uses all its instruments which are available on the TSMT, i.e. Learning Agreements, Competence Matrices, assessment forms, EUROPASS Mobility and Memorandum of Understanding. These documents and their relationship to the THEME project are described below.

2.1 ECVET Instruments

2.1.1 Learning Agreements

They are crucial to define the content of internships and to provide good conditions for a high quality. The sending institutions (VET college and/or training company) can define what the student is supposed to learn during the internship and the receiving institution (VET college, company, intermediary organisation) is aware of the tasks of the student.

2.1.2 Competence Matrices with Partial Competences/Concrete Learning Outcomes

As already mentioned the THEME project is among others based on VQTS matrices. The VQTS model assumes that although there are differences in national approaches on how training is offered and organised, it is possible to identify many similarities in the tasks of modern work processes. Thus, occupational requirements or the core work tasks including the required vocational or professional competences in an occupational field are often easier to compare than training programmes in different countries for achieving the required competences. Hence, the VQTS model provides a common language to describe competences and their acquisition also offers a way to relate these competence descriptions to the competences acquired in training programmes. The VQTS model follows a development logical differentiation of a Competence Profile and can thus also be used for describing the acquisition of competences. Competences are understood as contextualized bundles of knowledge, skills, abilities and attitudes which are needed to fulfil certain work tasks within a specific occupation. In the Competence Matrix Learning Outcomes related to an occupational field are presented in a table. The vertical axis of the Competence Matrix contains the Competence Areas, based on the various core work tasks of the respective professional field. The horizontal axis shows the steps of competence development which are outcome-oriented and indicate the progress of competence development of a learner or a graduate of a training programme. It illustrates the progressive degrees of competence and responsibility. The Learning Outcomes are described as professional competences which provide information about which core tasks a person can carry out in a specific work context (Luomi-Messerer (2009), 10f).

Former experience in mobilities based on VQTS matrices showed that it is not precise enough to describe and to evaluate the competence growth of a learner only by the competence description in a unit of the matrix. Therefore in the THEME project the Competence Development Steps in the matrices were improved and specified by defining Partial Competences/ Learning Outcomes which are necessary to achieve the competence development of a Competence Development Step. These Partial Competences equate Learning Outcomes. They facilitate the identification of possible units of Learning Outcomes which can be achieved during an ECVET compatible mobility, for short-term as well as for long-term ones. In THEME experts from the different sectors and from different countries built sectoral working groups with the main aim of improving the practical use of Competence Matrices. Existing matrices have been revised and for mobilities relevant Competence Development Steps have been further defined and described in Partial Competences/Learning Outcomes.

2.1.3 Assessments

Depending on the different VET systems and on the degree of obligation of mobilities abroad, their validation and recognition varies broadly. But in order to guarantee the quality of internships it is necessary to evaluate and assess them with a focus on the professional skills and competences acquired during the internship. In addition, each mobility always causes an increase of personal, social and language competences. The TSMT offers forms to assess all these competences and the results are automatically documented in the EUROPASS Mobility.

2.1.4 EUROPASS Mobility

The EUROPASS Mobility has the goal of documenting skills and competences that have been acquired in another European country e.g. during a mobility project. At present, section 5 of the EUROPASS Mobility allows transparent documentation of tasks carried out during mobility phases and of skills and competence acquired abroad. However, evaluation studies on the utilization of the EUROPASS Mobility show that the spaces in the document set aside for the description of the acquired skills and competences are not used as often as those set aside for the description of tasks and activities carried out in the mobility.

There seems to be a problem in differentiating between, on the one hand, the descriptions of jobs/tasks carried out and, on the other hand, the description of the skills/competences acquired because, to an extent, the same contents tend to be filled in for both. Moreover, the activities carried out and the skills and competences acquired have to be filled in by the institutions involved, even though these institutions possess no guidelines for this task. This can overtax the institutions, so that they either ignore the spaces set aside for the description of the competences or fill in general tasks and activities without a learning outcome orientation (ECVET meets EUROPASS Mobility, Documenting, Learning Outcomes, Mobilitities, Impuls 45 Report, published by the National Agency Education for Europe and the Federal Institute for Vocational Education and Training)

THEME Smart Mobility Tool aims at improving the quality of the documentation of mobility results in the EUROPASS Mobility through the application of ECVET criteria. TSMT differentiates clearly beween activities/tasks carried out and job-related skills and competences required. It aims at supporting and encouraging the recognition and validation in the home country of Learning Outcomes that had been achieved during a mobility. In addition, it contributes to further development of section 5.a. of the EUROPASS Mobility, i.e. the section designed for documenting skills and competences acquired during a mobility phase.

2.1.5 Memorandum of Understanding (MoU)

A partnership for ECVET mobility is formalised in a Memorandum of Understanding (MoU): a framework agreement between partner organisations, from two or more countries, confirming cooperation arrangements and procedures. The MoU sets out the roles of involved partners and specifies those conditions via which credits can be achieved and potentially transferred. The key aspects that must be shared, discussed, agreed on and made explicit in the MoU – prior to launching any mobility programme – include:

- Details of organisations signing the MoU and confirming areas of competence and responsibility in their countries.
- Available qualifications and units of Learning Outcomes:
  namely, those suitable for use with learners undertaking a period of geographical mobility.
- Assessment, documentation, validation and recognition procedures: confirming roles and responsibilities, tools, techniques and templates
  (http://www.ecvet-toolkit.eu/site/ecvettoolkit/beforemobility/preparememorandumofunders).

2.2 THEME Smart Mobility Tool: The Database to Manage Mobilities

by Franco Andrao and Susanna Casellato, Italy

2.2.1 Main Purpose and Functional Structure

Companies, VET colleges/VET providers and learners are the three main actors involved in international mobility experiences. Much of the success or failure of mobility programmes is due to how well they combine and cooperate in the organisation and management of the mobility process.

THEME Smart Mobility Tool (TSMT) (http://smart.theme-eu.net) is a tool for the management and administration of international mobility activities. It offers support to the actors in a way that ensures the full value of international mobility experiences to be achieved by all. TSMT simplifies all the tasks concerning the administration of mobility projects by giving access to trainees, host companies and VET colleges/VET providers to a range of support management tools and resources that they would otherwise need to develop independently. Making specific tools available online in simple-to-use formats allows learners, VET colleges/VET providers and host companies to quickly and easily click through the most relevant information and documentations for organising and managing mobility experiences abroad successfully.

TSMT is designed for registered users at all stages of mobility programme development: from newcomers to those with years of experience in managing international mobility projects.

TSMT creates an online database of all learners, host companies and training organisations and this permits the migration of the data in all the documents related to mobility. The ECVET documents are automatically generated by the system.

TSMT creates online assessment tools for all learners to assess work-related competences, social competences and language competences. Furthermore it gives learners the opportunity to self-assess the development of their personal competences before and after their mobility.

TSMT is an application that takes the functional experience of the E.R.M.E.S. Mobility Portal which was based on the Knowledge – Skills – Competences approach for describing Learning Outcomes. This setting of the E.R.M.E.S. database has changed by introducing Competences Matrices for different occupational fields based on the VQTS model. During the development and testing of the TSMT in addition to the use of Competence Matrices further improvements and substantial simplifications compared to the initial structure of the E.R.M.E.S. database were introduced. The object of changes and implementations focused on two specific areas of application:

- To simplify the process of managing mobility
- To facilitate the use of the application by companies and learners to support the compilation of their data and the assessments provided

The simplification concerning the MOBILITY MANAGEMENT was obtained by introducing the object PARTNERSHIP that creates a relationship between two institutions that can jointly operate for the realization of mobility projects.

To facilitate the use of the application, there is the possibility to send learners and companies protected links allowing safe access directly to the management pages. This function permits the users to fill in their data and the assessments without using any access credentials. The web application is structured into three areas reserved to authenticated users:

- Core application tools that include mobility, partnership, student and institution archives
- Institution and personal data management
- Documentation section containing all the documents, media and tutorial resources

By accessing the web application reserved area, VET colleges/VET providers and other organisations are able to:

- Improve and optimize the work performance of organisations staff by making the management of mobilities easier and more rational
- Automate management procedures in order to reduce operational time and avoid possible mistakes
- Monitor the overall activities of the mobility programmes
- Store all the information in a single tool that guarantees a quick access to its users to the data inserted
- Create international partnership with other institutions in order to organise mobilities
- Define the mobility programme by selecting Competence Matrix, Competence Areas, Competence Development Steps and Partial Competences/Learning Outcomes to be performed by the learners.

Company instructors and learners can be invited to directly access without login to their dedicated tools that allow them to:

- Assess the learners' performances by filling out an online work related assessment
- Assess the learners' social and language competences

Learners are able to

- Assess their personal competences

The details and the data modelling of TSMT can be found at http://smart.theme-eu.net

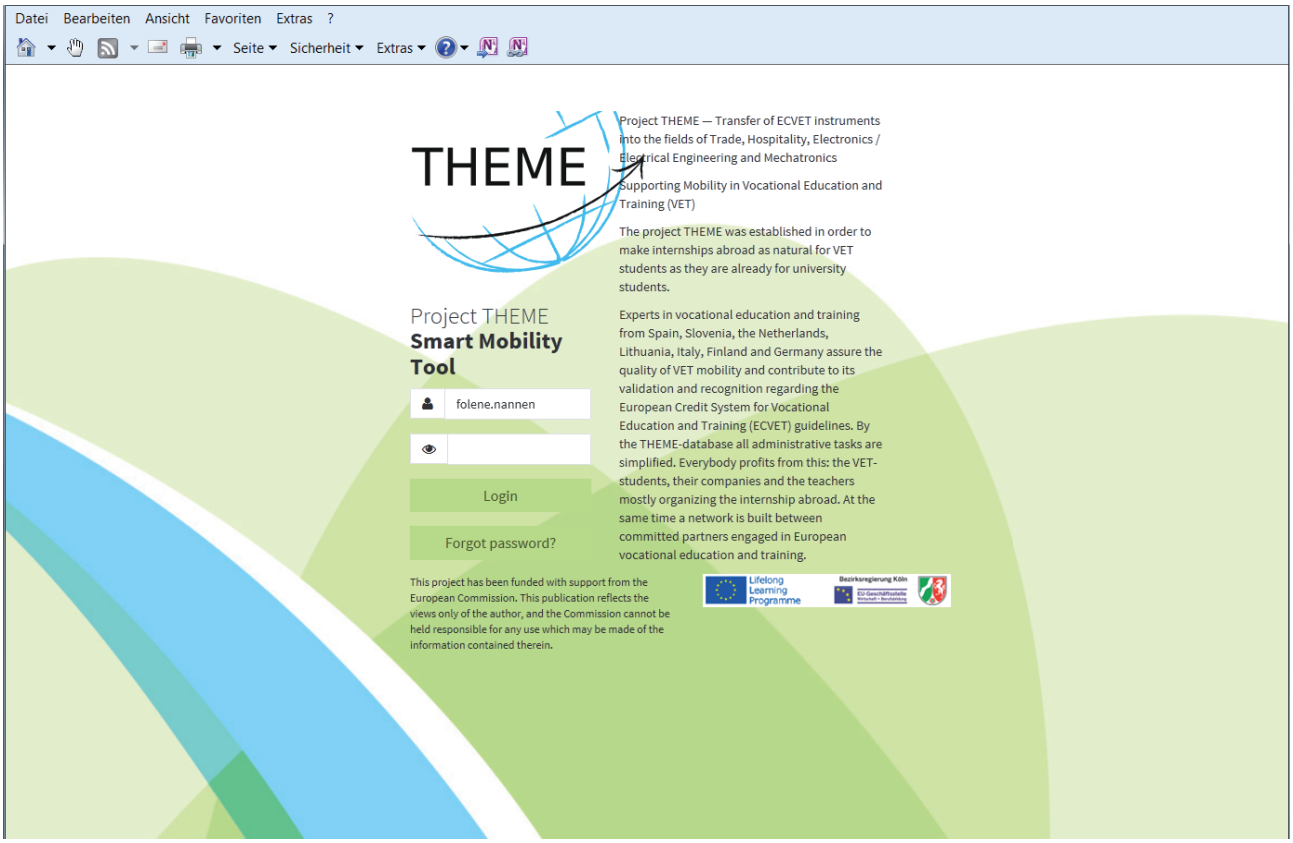

Figure 1: THEME Database

2.2.2 Front-End Application

TSMT offers different features on an account base, i.e. different interfaces are made available depending on the fact if the user is a representative from a VET provider, a hosting company or a student.

The UseCase Diagram shows the main application features based on roles.

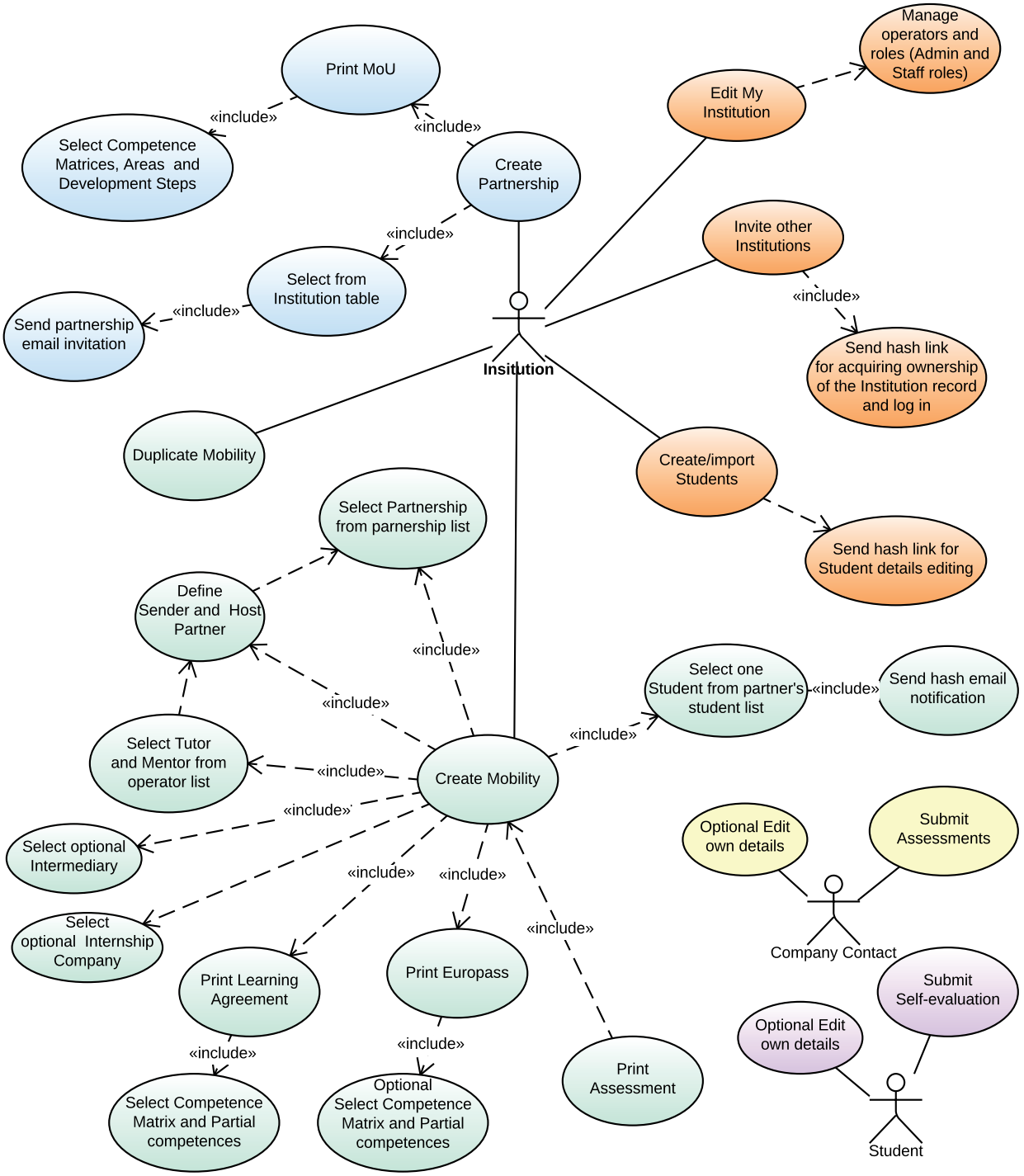

Figure 2: UseCase Diagram

The web portal application used as main interface of the database is based on Java Grails and html/Javascript with a new responsive layout, allowing all users to access and operate using web browsers, tablets or smartphone. The simplified users/roles and groups management, realised using Java Spring Security is to access all the restricted THEME website's pages.

The institutions' operators will access the home page after login. The layout of the application provides three main areas:

- Top menu with information about current users and organisations
- Left menu containing all the group functionalities
- Central page with all the forms to manage the database objects.

Once the mobility is created, it will be possible:

- To define the sending and host partner institution in the mobility starting from the two partners
- If required, to select from the institutions list the intermediary organisation to be mentioned in the Learning Agreement (LA)
- To add one student selected from the sending partner's student list
- To import student from csv file
- To profile the Partial Competences/Learning Outcomes, starting from the Competence Matrix selected by the partnership
- To automatically generate the LA
- To get work-related competences' assessments according to the Learning Outcomes selected in the LA

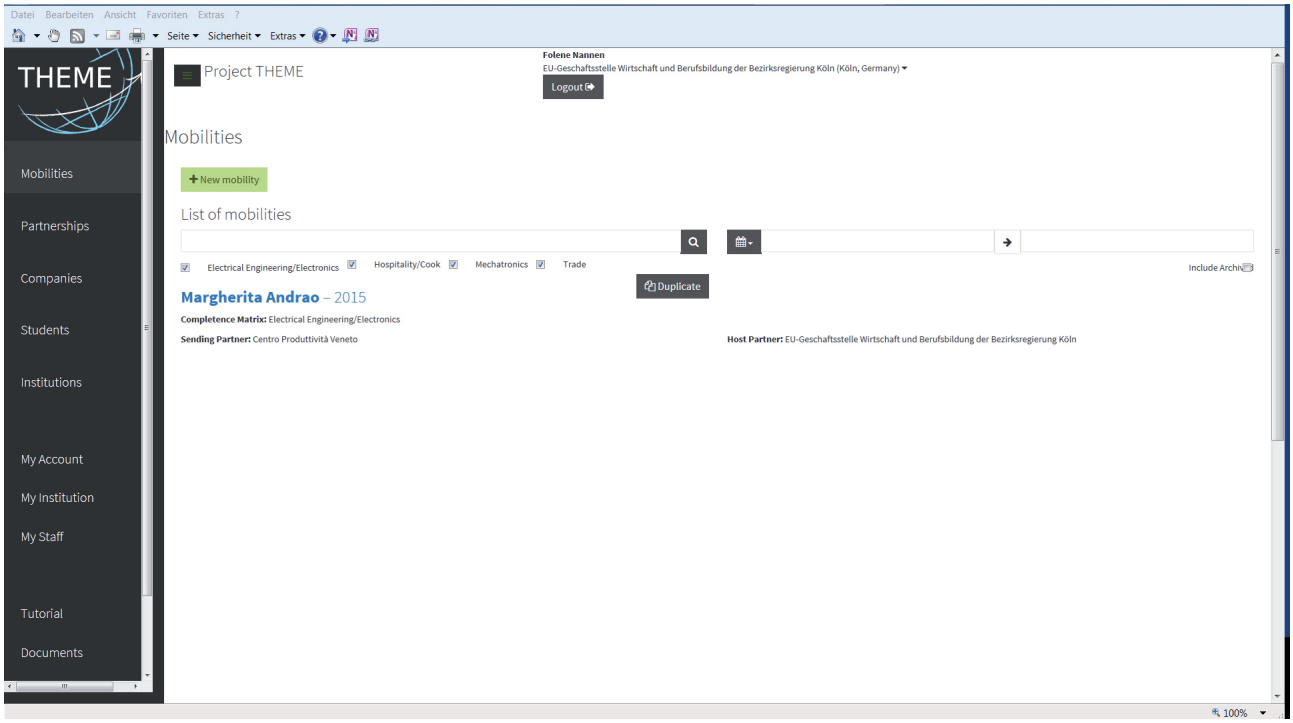

Figure 3: THEME WebBrowser

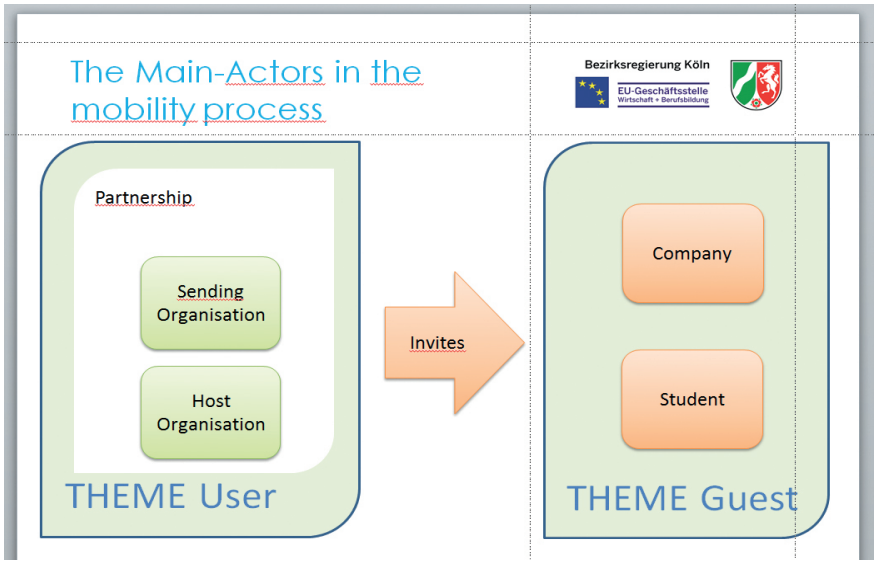

Figure 4:
Actors in a Mobility Process

The main actors in a mobility process and their roles are shown in this figure.

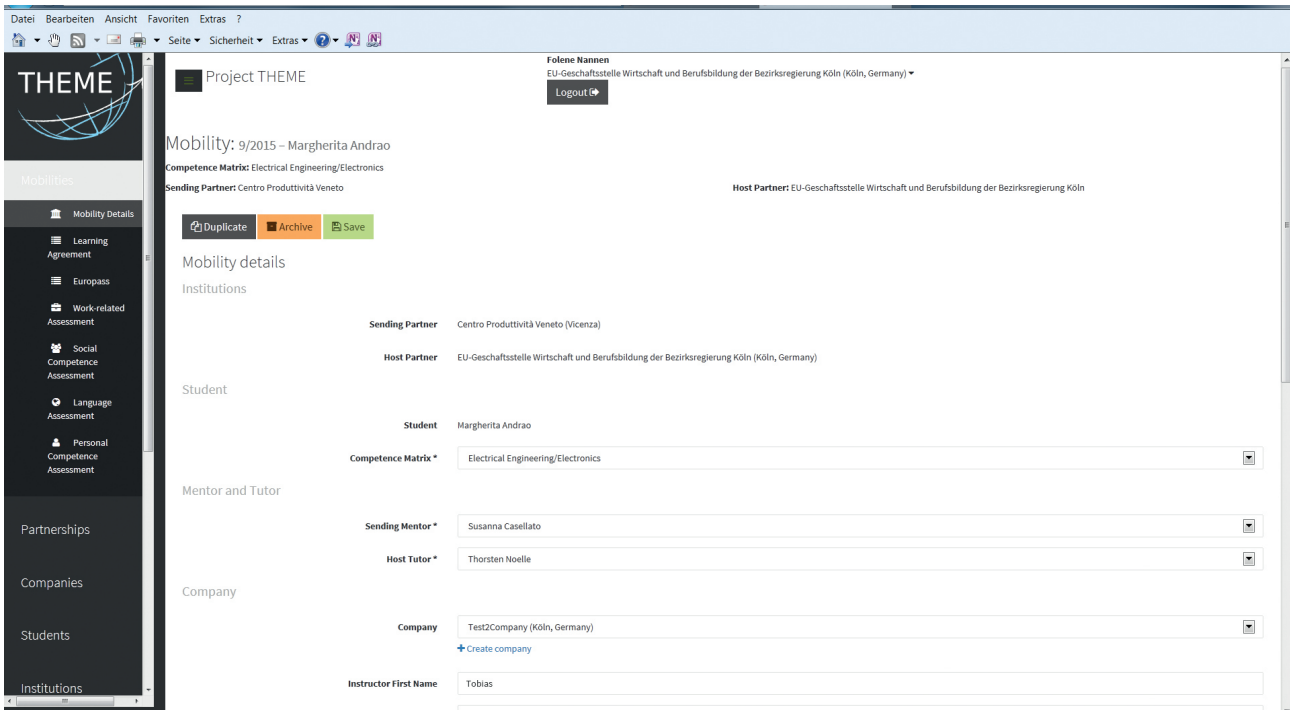

Figure 5: Mobility Details

A mobility can be created from any institution by selecting one or more already defined partnership.
The selection form provides search and filter tools.

In case additional Learning Outcomes have to be assessed it is possible to change them independently from the Learning Outcomes chosen in the LA. The changes of Learning Outcomes within work-related assessments will not affect the original settings in the LA. The following options are available:

- To automatically include all Learning Outcomes selected and assessed in the EUROPASS Mobility
- To register also all social competences in the EUROPASS Mobility
- For the student, to self-evaluate her/his personal competences before and afterwards the mobility
- To print the LA, EUROPASS Mobility and the assessments
- To duplicate the mobility: it clones all the information and relation of the mobility

- Flexible Selection of Partial Competences/Learning Outcomes

In TSMT the management process after defining a mobility, foresees the customisation of the LA by accessing the Partial Competences/Learning Outcomes selection page. The logical sequence of selection is: Competence Matrix → Competence Area → Competence Development Step → Partial Competence/Learning Outcome defining the aggregate of competences of the mobility. In order to guarantee a high degree of flexibility and being prepared for future developments it is possible to add new competences by the user.

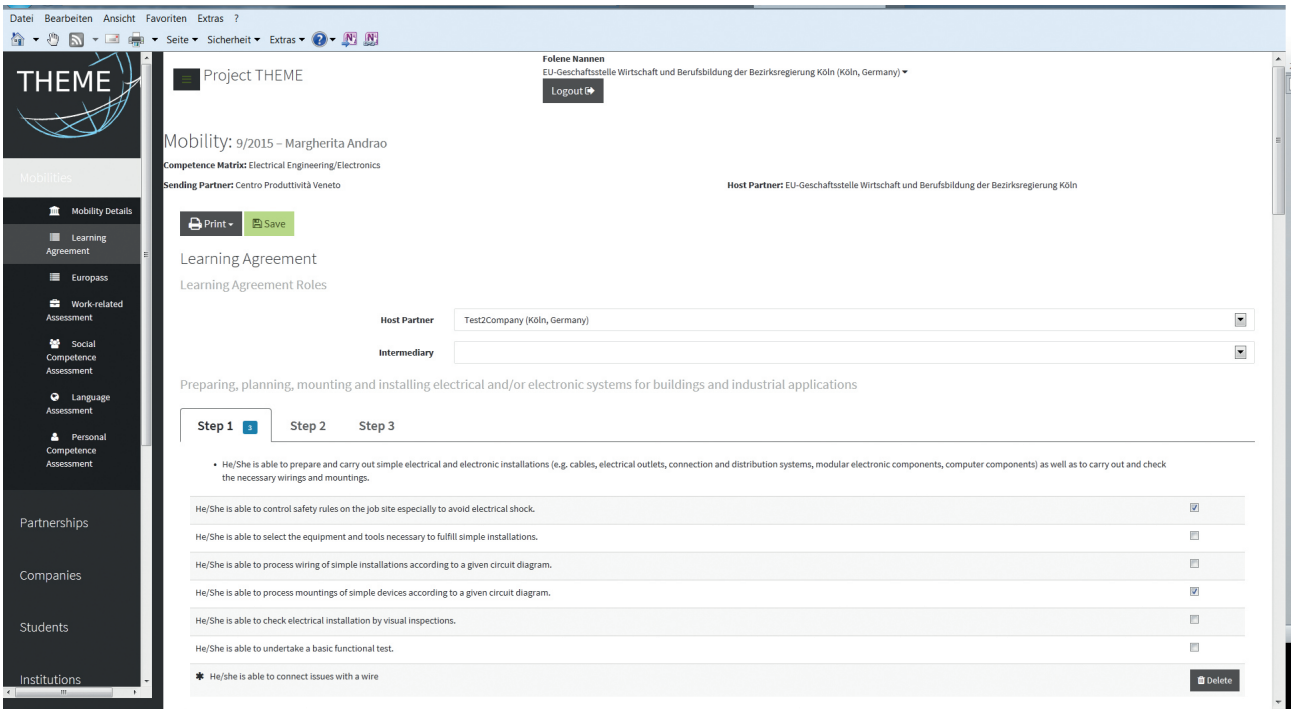

Figure 6: Learning Agreement with Partial Competences/Learning Outcomes

Work-Related Assessment

In TSMT it is possible to create a work-related assessment by the company instructor who is invited by a link to complete the form (figure 7).

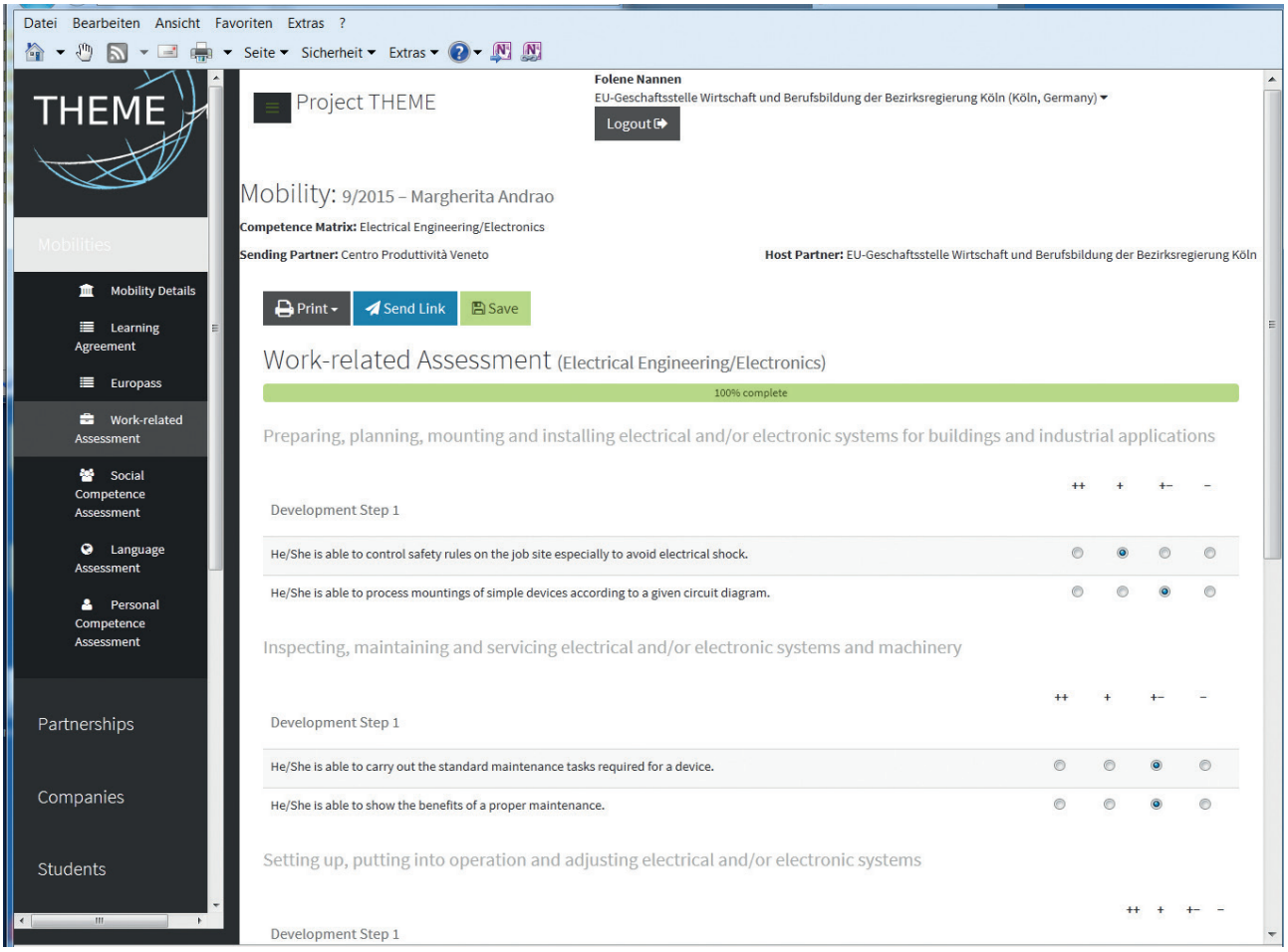

Figure 7: Work-Related Assessment Form

Language, Social and Personal Assessments

Similar to the work-related assessments, these respective assessment forms can be either completed directly by the partnership operator or by the company instructor and the student. In this case they get a protected link by e-mail thus allowing to access without any login procedures (figure 8).

Generating the EUROPASS Mobility

The EUROPASS Mobility is a European instrument that has been developed to promote transparency of qualification skills in Europe. TSMT automatically generates the student's EUROPASS Mobility once the company instructor assessment is completed. The EUROPASS Mobility is then available for download, after being automatically completed by the system with the available data.

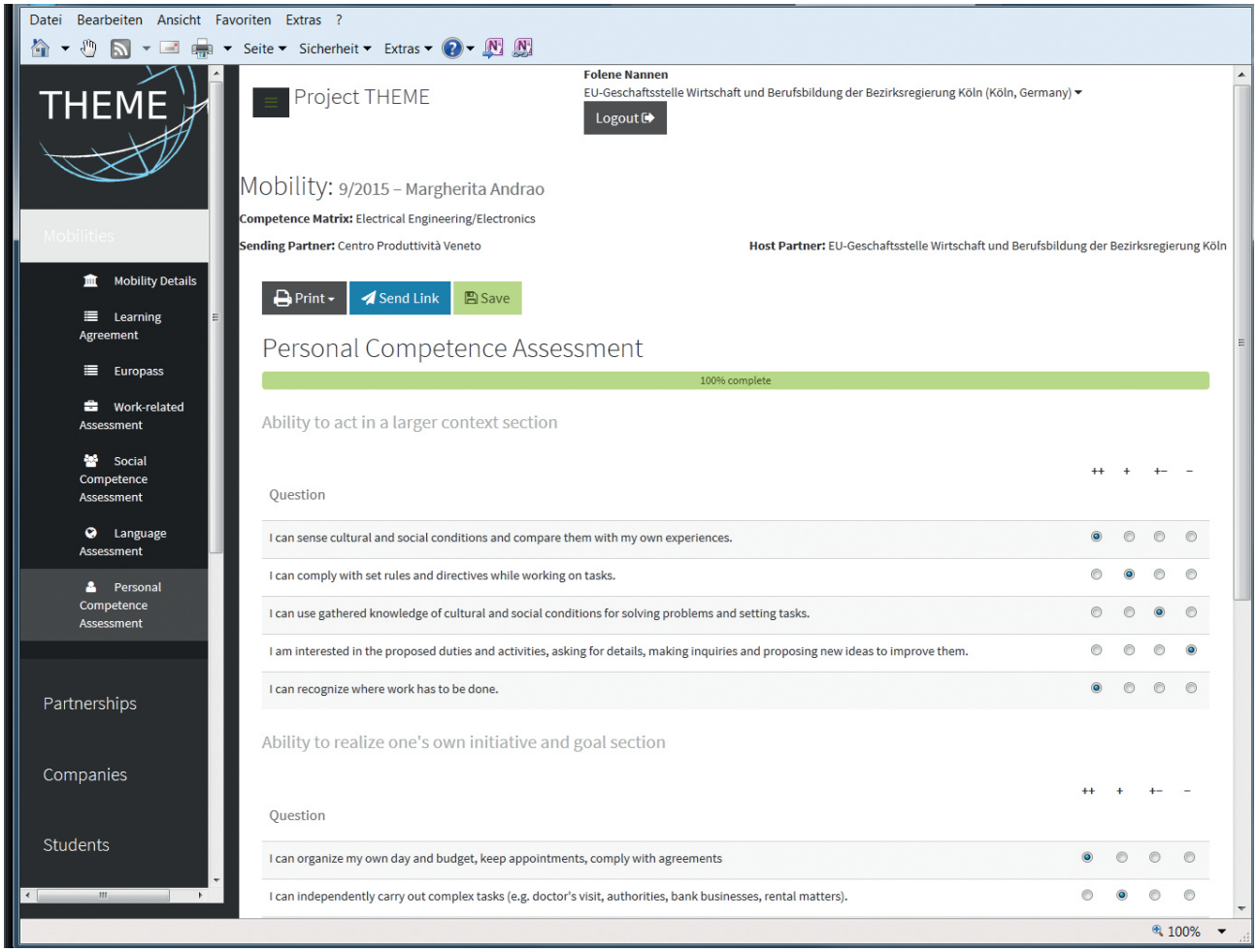

Figure 8: Personal Competence Assessment Form

2.2.3 Monitoring Mobility Experiences: Data Collection and Reporting as a Key to Improve Strategic Planning and Management

Monitoring and systematically analysing current trends in learning mobility have been given fresh impetus at European level.

As a result of the heightened political importance attached to international mobility, and the manifold practical attempts to increase it, there is an enhanced need for comprehensive, up-to-date, and reliable information on the phenomenon: statistical data on mobility are needed to measure progress – or otherwise – towards the various mobility goals and thus to inform the political actors of the impact of the programmes and other measures launched.

However, data measuring real mobility is not always available and is rarely sufficiently differentiated.

In designing TSMT partners identified the above-mentioned need for improved data collection of mobility experiences as of fundamental importance to the strategic development of the activity across the sector. The proposal of devising statistics on inserted mobility projects started mainly from the commonly agreed assumption that information about learning mobility remains somewhat anecdotal, and that European and national statistics are not sufficiently refined to portray it accurately.

The collection of data on mobility is fragmented and clear and coherent strategies are few and far between. However, change is on the way. As internationally mobile students have grown both in number and their strategic importance, many institutions have started to think about strategic approaches to mobility management and translate them into action. This is also mirrored by developments in European policy, which has emphasised the need to boost students/trainees, teaching staff and researcher mobility.

TSMT fits into this landscape. It aims at supporting institutions in assessing the current state of play regarding mobility, a prerequisite for strategy development.

It is further aimed at encouraging institutions to generate strategies bottom-up, while considering the top-down forces or, in other words, the extent to which European and national policies influence the daily management of learners‘ and teaching staff mobility.

2.2.4 Testing

In order to guarantee the validation of TSMT a testing of the prototype has been carried out through piloting activities with real and/or simulated mobility projects. The pilot has been clearly meant to test and improve the TSMT before its final release. In effect, the project has been structured as to encourage reflection, discussion and the sharing of experience on the testing process as well as feedback regarding the design, contents and usability with the aim of adapting and improving TSMT for future and wider use.

TSMT piloting phase has met the general objective through several individual pilot goals that have been the focus of the THEME activities during the running phase. These individual goals can be summarized as follows:

- Assessing TSMT's functionalities by groups of users, also external to the partnership, who provide constructive feedback. An important part of piloting activities has been the active monitoring of the results and feedback, so that learning can be derived from the real life running of the services
- Demonstrating the feasibility of the tool specifications and solutions defined and implemented as well as its advantages compared to already existing tools for the management of mobility projects
- Consolidating results and drawing conclusions from the running phase of the pilots

The testing phase has produced positive results with regards to the methodological and technological solution adopted for an efficient management of mobility projects. The experiences of usability of the tool helped to identify critical aspects and strengths of the tool thus setting out the basis for further improvement. During the running phase that started within October 2014 and July 2015, and in accordance with planned activities an intense effort has been made to gradually move the services in production within the pilot from the domain of proof-of-concept applications and controlled experiments to that of sustainable online services. This has been facilitated by the demanding operational conditions of having the pilots run with real end-user exposure in operating/usage conditions. Success with respect to this particular effort as well as the satisfaction of different expectations by different stakeholders, mainly students and schools/VET providers staff, is the key to the overall perception of the success of the pilot study. Success criteria have been identified at early stages of the project, during the detailed planning of the activities and tasks of the pilot but their role and importance have been enhanced as a crucial component of the project methodological approach. Criteria for success have been the result of several discussions and an iterative refinement of their definition during project meetings and, only after balancing a reasonable equilibrium between what was desirable and what was sufficient and feasible, consensus on their formulation has been reached.

3. Experience, Value and Impacts in Different Professional Working Fields

3.1 Trade

by Mechthild Rieger-Zachrau, Germany

The trade working group was presented with the unique and very comfortable situation of actually having a sound and valid basis for their work: the existing TRIFT matrix. This matrix results from a 2010-12 Leonardo da Vinci – Transfer of Innovation Project, fostered by the European Commission and coordinated by the EU Agency of the Cologne Government Regional Office. It had been developed according to the VQTS (Vocational Qualification Transfer System) describing, in a table, the job-related competences (vertical) and the progression of a person's competences (horizontal). The TRIFT matrix aimed at achieving a transparent and comparable reference system for work and learning processes in the field of foreign trade in Europe. In addition, a set of instruments for assessment and evaluation was designed on the basis of the matrix.

Thus, within the THEME project a working group trade was established, consisting of those members who had a stake in the occupational field of trade and who were eager in further developing and adapting the existing TRIFT matrix according to their needs and to the requirements in practice. Theses members were from Finland, Germany, the Netherlands, Slovenia and Spain.

In particular, the group aimed at

- Mapping beforehand their national VET programmes (for a mutual understanding of what the occupation of trade involves in the various countries)
- Revising the matrix and re-defining the stipulated Partial Competences/Learning Outcomes according to more practical needs with student mobilities
- Discussing the results with experts in their countries and promoting student mobilities with the help of the newly developed THEME database

3.1.1 Mapping of National VET Programmes and Revising the TRIFT Matrix

Before starting to deal with the TRIFT matrix, it was jointly agreed that a mapping of the national VET programmes would be a useful prerequisite for specifying the various competences and Partial Competences/Learning Outcomes in the ensuing process of revising the matrix. Such a matrix, this should be emphasized again, should and could not cover the entire vocational programmes of the partners (thus, it is not a summary of everything) but should serve as a common basis for what is meant when we talk about competences/Competence Areas and Competence Development Steps with internships in the EU. Thus, such a matrix is meant to entail a practical orientation providing a transparent and comparable reference system in order to promote and facilitate mobilities.

Mapping the national VET programmes was designed as a two-fold assignment, with the members of the trade working group first giving an overview of their national VET programmes and second, marking those areas in the TRIFT matrix that are dealt with at the various stages during the national traineeships. Each country chose the one national VET programme (post-secondary education) that covered most of the areas of the working field trade. Before this could be carried out in the various home countries, it was necessary to clarify among the member countries as to whether trade was meant to refer to wholesale trade only or to retail trade as well. It was commonly agreed that both should be covered by the revised matrix but that it will certainly be aimed more at wholesalers (cf. Competence Areas 3, 4, 5, which are solely applicable in wholesale trade) and less at retailers (where more of the transversal competences are important, e.g. carrying out sales talks, and which are not directly being dealt with in the matrix, only in the assessment tools).

As a result of this first step of the mapping, one can say that Germany is very different from the other member states (here: Finland, the Netherlands, Slovenia and Spain). The dual vocational training system in Austria, Germany, and Switzerland is known to be unique as it combines apprenticeships in a company and vocational education at a vocational school in one course. Moreover, these courses are developed in close co-operations with the various German chambers of commerce and industry which also carry out the students' final examinations. Students apply at companies for traineeships and in fact get a small salary for their work. The state schools (vocational schools) provide the theoretical background and there is no tuition fee. Altogether these results in a highly professional training with a close collaboration of all partners involved. Concerning those THEME partners from Finland, the Netherlands, Slovenia and Spain things are different. Within all four countries, students have to apply at the vocational schools for a particular vocational education course. Those courses usually run full-time but also provide practical training (internships) at companies. The ratio between theoretical and practical training varies considerably, depending on the countries as well as on the age of the students (thus, courses for students 16-18 entail more school education than for students 18+ who are already at work) or the traineeships (cf. the Dutch model of the two learning paths). With some courses, also tuition fees are levied, in the Netherlands, for instance, for students 18+. Final exams are generally organised by the schools in all of those four countries. For further details of the differences in the national VET programmes, refer to the annex.

As to the second task, the actual mapping of the national programmes into the TRIFT matrix, one can see that those areas that were also identified as most appropriate for student exchanges (cf. Competence Areas 1, 2 and 6 and within these areas: Competence Steps 1 and 2) were all covered by the education programmes of the countries involved.

This has been taken into consideration, as the group decided to deal with the existing TRIFT matrix in the way of revising and discussing especially the above-mentioned areas 1, 2 and 6 (all steps). The group agreed to summarise the descriptions of the original matrix and to provide a more concise survey on internships, as the study entails. Thus you will find that the THEME matrix is shorter in these areas. It was considered more useful to refer to the elaboration of what a given step entailed in practice to the description of the Partial Competences/Learning Outcomes. (Please consider figures 9 - 12.)

TRIFT

Competence matrix for the area of foreign trade				
Competence area (core work processes)	**Steps of competence development / competences for work tasks**			
1. Organising and conducting the process of selling products and services	He/She • can analyse customer needs by enquiries and deal with well-defined customer orders regarding established product portfolios (including explaining products, services and delivery process). • can prepare corresponding quotations and provide the shipping process (e.g. clarify availability of products and shipping services, fill out forms like packing lists and certificates of origin). • can provide prices and conditions in given frameworks to known customers. • Can answer customers' standard questions concerning the order, delivery and payment process.	He/She • can initiate the customer's order through making offers based on his needs. He/She can analyse the specifications of the customer's enquiry and clarify all delivery conditions. • is able to negotiate prices, delivery conditions (time, type of shipping etc.) with the customer. • can prepare information (write reports, prepare presentations) about customer needs, product/service specifications, market situation and delivery conditions for the management and provide relevant contracts and agreements. • can arrange the delivery of goods and services as parts of the SOP. • can check the payment process and handle standardised payment procedures (e.g. L/C). • is able to organise and provide information flow (e.g. by factory tours, producing reports, …) required by customers and/or sales partners in order to present the company's production facilities. • Within this process he/she should be able to answer questions arising, preferably in several different languages.	He/She • can advise customers, clarify ordering problems and socialise with persons in relevant institutions (e.g. distributor services, trade information centres, chambers of commerce, …) to find possibilities for selling. • can compare offers from competitors and arrange suitable quotations together with other companies. • can arrange the process of negotiation taking into account all aspects (price, contract, delivery, insurance, legal regulations, preferential tariff rate, payment).	He/she • can find solutions for delivery problems, financing and contractual difficulties; especially cooperating with freight forwarders, joint venture partners. • can organise payment processes including handling of outstanding payments as well as clarifying contractual penalties. • can follow up the selling process, prepare statistics and design strategies to achieve customer satisfaction (reporting customers' reactions; handle claims arising taking into consideration a cost-effective solution). • can organise and implement product training for sales partners and customers and can represent the company at trade fairs. • Is able to arrange and undertake business trips, in order to find further sales potential, to reinforce customer relationships or to regulate claims.
2. Ensuring the process of purchasing	He/She • can order well defined lots and products (known products, supplier and delivery services) with the help of enterprise resource planning (ERP like SAP/Navision) systems. • can handle ordering documents and ensure information flow to different departments and companies.	He/She • can observe purchasing processes and compare offers in terms of prices, quality and delivery conditions. • can analyse the distribution market and carry through regional market analysis for ensuring suitable purchasing processes (benchmarking, brands, product areas, different cargo enterprises). • can negotiate prices and delivery conditions. Depending on the status of delivery he/she can ensure that the seller is provided with and uses the right forms while ensuring that all necessary documents are dispatched (e.g. waybills: CMR, airway bill, B/L, invoice, certificate of origin, export declaration, letter of instructions for the seller, packing list).	He/She • can analyse the purchasing process to decide suitable sellers, appropriate products in terms of material / services for production and the best transport company and transport process taking into account delivery conditions (time, price, transport conditions needed for different goods ...). • is able to calculate transport costs and to solve problems with respect to obtaining missing information, correcting faulty documentation, completing the payment process and making suitable arrangements in the event of delivery failures (such as finding replacement for a transport company).	

Figure 9: Original TRIFT Matrix (Section)

THEME

THEME Competence Matrix - Trade

Lifelong Learning Programme

COMPETENCE AREAS	STEPS OF COMPETENCE DEVELOPMENT			
1. Organising and conducting the process of selling products and services	He/She is able to deal with customer needs by enquiries, prepare corresponding quotations (either in writing or orally) and deal with well-defined customer orders regarding established product portfolios (including explaining products, services, payment and delivery process). He/She is able to organise the shipping process (e.g. clarify availability of products and shipping services, fill out standard forms like packing list, accompanying documents and certificates of origin) according to existing standards.	He/She is able to analyse and/or deal with the specifications of customer needs (by enquiries), initiate customer orders through making offers based on his needs and handle/deal with customer orders. He/She is able to prepare and/or provide information (write reports, prepare presentations) about customer needs, product/service specifications, market situation, delivery and shipping conditions for the customer, sales partner or management and provide relevant contracts and agreements. He/She is able to organise and/or provide information flow (e.g. by advertising, factory tours, …) required by customers, management and/or sales partners in order to present the company's production facilities.	He/She is able to advise customers, clarify ordering problems and socialise with persons in relevant institutions (e.g. distributor services, trade information centres, chambers of commerce) to find possibilities for selling. He/She is able to arrange the process of negotiation taking into account all aspects (price, contract, delivery, insurance, legal regulations, preferential tariff rate, payment, customer satisfaction and offers of other companies).	He/She is able to find solutions for selling, payment and delivery problems, financing and contractual difficulties. He/She is able to prepare statistics and design strategies to achieve customer satisfaction (reporting customers' reactions; handle claims arising taking into consideration a cost-effective solution). He/She is able to organise and implement product training for sales partners / customers and is able to arrange / undertake business trips (e. g. trade fairs).

Figure 10: Improved THEME Matrix (Section)

TRIFT

Competence matrix for the area of foreign trade				
Competence areas (core work processes)	**Steps of competence development / competences for work tasks**			
1. Organising and conducting the process of selling products and services	He/She • can analyse customer needs by enquiries and deal with well-defined customer orders regarding established product portfolios (including explaining products, services and delivery process) • can prepare corresponding quotations and provide the shipping process (e.g. clarify availability of products and shipping services, fill out forms like packing lists and certificates of origin) • can provide prices and conditions in given frameworks to known customers • can answer customers' standard questions concerning the order, delivery and payment process	He/She • can initiate the customer's order through making offers based on his needs. He/She can analyse the specifications of the customer's enquiry and clarify all delivery conditions • is able to negotiate prices, delivery conditions (time, type of shipping etc.) with the customer • can prepare information (write reports, prepare presentations) about customer needs, product/service specifications, market situation and delivery conditions for the management and provide relevant contracts and agreements • can arrange the delivery of goods and services as parts of the SOP • can check the payment process and handle standardised payment procedures (e.g. L/C). • is able to organise and provide information flow (e.g. by factory tours, producing reports, …) required by customers and/or sales partners in order to present the company's production facilities • Within this process he/she should be able to answer questions arising, preferably in several different languages	He/She • can advise customers, clarify ordering problems and socialise with persons in relevant institutions (e.g. distributor services, trade information centres, chambers of commerce, …) to find possibilities for selling • can compare offers from competitors and arrange suitable quotations together with other companies • can arrange the process of negotiation taking into account all aspects (price, contract, delivery, insurance, legal regulations, preferential tariff rate, payment)	He/she • can find solutions for delivery problems, financing and contractual difficulties; especially cooperating with freight forwarders, joint venture partners • can organise payment processes including handling of outstanding payments as well as clarifying contractual penalties • can follow up the selling process, prepare statistics and design strategies to achieve customer satisfaction (reporting customers' reactions; handle claims arising taking into consideration a cost-effective solution) • can organise and implement product training for sales partners and customers and can represent the company at trade fairs • Is able to arrange and undertake business trips, in order to find further sales potential, to reinforce customer relationships or to regulate claims
	Descriptors:			
	HE / SHE can capture and document the needs of costumers in phone-calls and personal communication.			
	HE / SHE can gather the necessary information from written standard customer enquiries in foreign language.			
	HE / SHE can obtain the necessary data for a typical offer within the company.			
	HE / SHE can initiate the processes necessary for standard orders within the company and prepare the corresponding documents.			
	HE / SHE can compile an offer based on the information present about customers and products/ services in a defined framework.			
	HE / SHE can answer standardised customer questions regarding orders.			

Figure 11: TRIFT Matrix with Descriptors (Section)

THEME

THEME Competence Matrix - Trade with Partial Competences/ Learning Outcomes

Lifelong Learning Programme

COMPETENCE AREAS	STEPS OF COMPETENCE DEVELOPMENT			
1. Organising and conducting the process of selling products and services	He/She is able to deal with customer needs by enquiries, prepare corresponding quotations (either in writing or orally) and deal with well-defined customer orders regarding established product portfolios (including explaining products, services, payment and delivery process). He/She is able to organise the shipping process (e.g. clarify availability of products and shipping services, fill out standard forms like packing list, accompanying documents and certificates of origin) according to existing standards.	He/She is able to analyse and/or deal with the specifications of customer needs (by enquiries), initiate customer orders through making offers based on his needs and handle/deal with customer orders. He/She is able to prepare and/or provide information (write reports, prepare presentations) about customer needs, product/service specifications, market situation, delivery and shipping conditions for the customer, sales partner or management and provide relevant contracts and agreements. He/She is able to organise and/or provide information flow (e.g. by advertising, factory tours,…) required by customers, management and/or sales partners in order to present the company's production facilities.	He/She is able to advise customers, clarify ordering problems and socialise with persons in relevant institutions (e.g. distributor services, trade information centres, chambers of commerce) to find possibilities for selling. He/She is able to arrange the process of negotiation taking into account all aspects (price, contract, delivery, insurance, legal regulations, preferential tariff rate, payment, customer satisfaction and offers of other companies).	He/She is able to find solutions for selling, payment and delivery problems, financing and contractual difficulties. He/She is able to prepare statistics and design strategies to achieve customer satisfaction (reporting customers' reactions; handle claims arising taking into consideration a cost-effective solution). He/She is able to organise and implement product training for sales partners / customers and is able to arrange / undertake business trips (e. g. trade fairs).
	Partial Competences/ Learning Outcomes:			
	He/She is able to communicate in a customer- and service-oriented way in consultation and sales conversation (e.g. in phone-calls, personal communication, e-mails and/or internet orders).			
	He/She is able to gather the necessary information from written and/or oral standard customer enquiries.			
	He/She is able to obtain the necessary data for a typical offer within the company/from other companies and compile an offer based on the present information about customers and products/ services in a defined framework.			
	He/She is able to provide basic information and answer customers standard questions (e.g. concerning orders, prices, shipping or payment processes).			
	He/She is able to initiate the processes necessary for standard orders within the company/with other companies and prepare the corresponding documents.			
	He/She is able to enter and/or follow the necessary data in a delivery and payment process.			

Figure 12: Improved THEME Matrix with Partial Competences/Learning Outcomes (Section)

3.1.2 Re-Defining Partial Competences/Learning Outcomes and Discussing Results with National Experts

It was a core issue in the revision of the TRIFT matrix to focus on examining the Partial Competences/Learning Outcomes (within the TRIFT project referred to as descriptors) as elaboration of what a given step entailed in practice to the description that the matrix was widely acclaimed as a very useful, effective and well-structured tool in promoting mobilities and bridging the gap between schools and companies but also considered as a bit complex. Competence is understood as the „internal structure of an individual acting according to the situational requirements executing a specific type of action". That means that an individual's competence cannot be assessed directly and comprehensively at the performance level. In order to assess the professional behaviour of a person indicators are needed that allow a valid conclusion of a person's overall competences. The development of the TRIFT descriptors has encouraged a very fruitful discussion among THEME partners. Their aim was to re-define the descriptors as Partial Competences/Learning Outcomes and in a way that they covered any possible task in a given step as concrete and as clear as possible. As mentioned above, we would like to add to this result also the discussion of the Partial Competences/Learning Outcomes with experts in the various home countries:

Comment from Spain

From the viewpoint of the Spanish partner the Partial Competences/Learning Outcomes were defined as specifically as necessary. Most Partial Competences/Learning Outcomes defined were very similar from one country to another, if they were related to the same Competence Development Step. But of course language plays an important role. The best Spanish commercial director will fail in Germany if he does not speak German correctly, and vice versa. „According to our opinion, the matrix of Partial Competences/Learning Outcomes can be a very useful tool for companies and users because it simplifies the evaluation, and it can also be used to take corrective measures and improve the final outcome, if intermediate evaluation is done."

Comment from Slovenia

The matrix was first discussed with the students in round table. We compared the objectives of practical training as written in our post-secondary study program Economist (EQF level 5) with competences and Partial Competences/Learning Outcomes listed in the draft of the matrix. Students found many similarities at the higher level of competences. They compared their own plans for in-company training with the matrix. The second round of discussion was carried out with some professors of foreign trade. They were invited to cooperate directly and we interviewed them (study programme Economist, EQF level 5). They found several comparable competences and Partial Competences/Learning Outcomes in the matrix on all levels but some of them were to be found only at university level (among them are the most frequently mentioned competences such as negotiation, self-speaking, decision making ...). According to their opinion, the Slovenian national VET programme does not cover all Competence Areas but most of them. As mentioned before, professional traders in Slovenia are to be found on higher levels of education. It was confirmed also through discussion at some companies which had some experience with the practical education of students. Companies are supporting the system which is easy to understand and to follow up.

Comment from the Netherlands

In the Netherlands the matrix was discussed in some companies which had experience in this field. For the Dutch context, there are a lot of competences and Partial Competences/Learning Outcomes that fit the Dutch qualifications. We think it will be helpful for our schools if there is an option to compare the European matrix with the national matrices. Also, it is very useful for teachers and company representatives because they get a concrete insight what can be learned or has to be learned within the company during mobility periods.

Comment from Finland

The key elements of the Partial Competences/Learning Outcomes were almost similar compared to the THEME matrix, thus it was not necessary to implement some kind of Finnish dimension to the matrix. In the spring of 2014 we had an opportunity to discuss our matrix work with an expert representing the business world of Finland. The following phrase came up: „The first impression of the matrix is that it is very skillfully constructed and it has demanded a lot of expertise to finish. There is a clear sign of professional ability in the details. Steps of Competence Development are logically implemented". However there are some major challenges. Finnish companies in the field of foreign trade (or any other field) are usually highly specialized and small. In order to maintain their competitiveness they tend to rely on a network of other specialized firms. Thus they may not have so many functions as this Competence Matrix assumes. When a trainee is hired for a certain time period it is very difficult to offer him or her such a wide variety of tasks because many of those tasks are outsourced and carried out in other companies. This problem was a major reason for our difficulties in arranging mobilities in the area of international trade.

Comment from Germany

The revised matrix was discussed with teachers of vocational colleges (commerce) and the opinion was that the matrix covers the basic elements of the apprenticeship wholesale and expert clerk. This was considered especially true for the first steps of the different competences, the final ones in each Competence Area being understood as an expert level that required several years of professional experience. The first two steps were considered especially useful for student mobilities and Competence Areas 2 (purchasing processes) as well as 6 (market analyses) seemed to be preferable areas for foreign students. Experts from companies (especially representatives of a large German food wholesaler and retailer) considered the matrix a very useful step for the promotion of qualified internships abroad. Generally, there was certain hesitancy as to the feasibility of internships abroad due to the tight schedule of the German apprenticeship regulations which provide practical training in companies anyway.

3.1.3 Promoting Student Mobilities with Newly Developed Database

In comparison with the other occupational groups, there were not so many mobilities that took place within the trade sector. This comes as no surprise as it is a general experience that the language barrier is far higher in commercial work fields than in technical or craftsmanship jobs. With the steady rise of English as a lingua franca also in many national companies, this might become a minor problem in the future. Another factor that might account for the difficulty of promoting internships is the structure of the trade industry in the various countries. In Spain (and in Finland alike) the trade industry is not so much dominated by large companies but – as the Spanish team member stated in his report – „we see that micro and small enterprises in Spain represent 99.28% of the companies. For these companies and their staff it is a fact that they often have to work in different departments at the same time. Multitasking is a reality and a need." Thus, a student from abroad would be required to work in various Competence Areas at the same time which in turn would certainly require a high amount of professionalism on the part of the student.

In this documentation, we would like to highlight a student exchange between Finland and Germany. This is the report from the Finnish team: "One of the very successful mobilities took place in Kouvola Region Vocational College in the unit of business and administration in December 2014 with a student from Germany. According to his CV and job preferences, an advertising agency offered him a placement. The student was very satisfied with his mobility experience and was especially happy with the friendliness, the pleasant atmosphere and the fact, that he had an opportunity to speak English at all times and to improve his language skills. Although the company couldn't provide a wide variety of tasks, he was happy performing the ones due to his competences. This type of exchange is especially useful for the students who wish to develop their personal and professional competences. Adaptability to new conditions abroad, opportunity to meet new people and broadening their horizon – these are the obvious objectives every young person is expecting from the mobility exchange and they should be valued as much as the enhancement of a professional set of skills. At that time, the use of documents provided by the THEME database was quite new to any of the parties involved. With a growing familiarity of the database future exchanges will certainly be of even better mutual benefit. As it was already mentioned before, the database very much helps to understand each other and prevents those all too common misunderstandings concerning the goals of the mobilities. Summing up, the database is a very important and vital part of the whole mobility period, starting from understanding the objectives and ending in assessing of the competences of the participant."

All members of the trade working group agreed that the THEME database was extremely useful, especially for their line of industry (trade). It will definitely facilitate mobilities as it provides a tool of common understanding and transparency about what to expect from internships abroad. The tools and instruments, especially the learning agreement were considered utmost important. By way of example, we quote the Spanish team: „Defining Learning Outcomes for professions is a very fruitful result of the ECVET process. In Spain, the ECVET system has not yet been widely adopted. My business entity, the ACIT, will use those tools (as adapted in THEME) for future mobility programms as they are great tools that will facilitate managing our mobility programms."

3.2 Hospitality/Cook

by Nicola Alimenti, Italy and Dr. Folene Nannen-Gethmann, Germany

3.2.1 Revision of the Matrix

In the hospitality working group, partners from Germany, Italy, the Netherlands, Slovenia, and Spain cooperated. The participants brought in different kinds of experience, namely as teachers with long-time experience in teaching cooks, as members of examination boards and as members of intermediary organisations respectively institutions who organise mobilities and take care of cook students' internships. The different traditions in vocational education and training (VET) in the participating countries guaranteed that different aspects of VET and VET students' mobility have been considered. In contrast to the other working groups in the project, the hospitality group based on a matrix for one single profession, cook, which was originally developed by a project from 3s in Austria. In some kinds this made work easier, especially as the matrix was not too complex and the Competence Areas defined and the associated Partial Competences/Learning Outcomes are more specific. On the other hand the broad experience of experts in the working group led to a thorough revision and amelioration for practical use of the matrix before starting with developing Partial Competences/Learning Outcomes.

By revising the matrix and developing Learning Outcomes the focus was on its practical use in the training of cooks and in the internships for cook students. The matrix was supposed to describe all competences a future chef should have including the previous Competence Development Steps. Feedbacks from chefs in different countries, different kinds of restaurants and on different aspiration levels – from a seniors' residence to a star cook – approved that the different working processes of a cook were well defined and circumscribed. This helps to define as well as to evaluate and assess the content of Learning Units and/or internships. The matrix connected to the hospitality sector describes one single profession, cook, even if several Partial Competences/Learning Outcomes are also part of other professions in the hospitality sector, i.e. bakery, waiter, barman, etc.

Participating in the re-definition of this matrix and the development of Partial Competences/Learning Outcomes has been motivating for the following reasons:

- All partners had the opportunity to collaborate in the definition of the contents of a project that has an impact at European level
- The approach has been realistic and based on the labour market
- Partners deepened their experience in ECVET and have been directly and constantly involved in the trial and spreading of the results achieved

The instruments developed during the project have been tested in mobilities, e.g. between Apro from Italy and ACIT from Spain. In this professional field Apro participated in the development and improvement of the hospitality/cook matrix and experienced the mobility process as a sending institution. It used the matrix to clearly define with the receiving institution (ACIT) the target competences and to have detailed agreements on the Learning Outcomes of the students involved in the mobilities. We used a paper version of the instrument because the on line platform was still in testing.

Thanks to this matrix it was easy to define the competences of the students before the mobility experience and the expected results at the end of the internship abroad. Moreover those aspects helped to define a real and coherent Learning Agreement. One of the added values of the THEME project is that sending and receiving institution share the same language: same instruments, method and assessment criteria. This helps to avoid discrepancies between the sending institution, the student and the hosting institution. Apro students took part in the mobility from 28th February to 29th March 2015. The group consisted of ten students under eighteen, attending their final year at Apro Vocational

Training Centre, catering and restaurant sector; five of them, cook professional profile, were involved in the THEME project. According to their CVs and thanks to the hospitality/cook matrix a four weeks work placement was arranged for all students. They were mentored by a member of ACIT and by an accompany teacher of Apro. The role of the company tutor was also clearly defined.

The main motivations of the students for training abroad were:

- Enhancing technical/professional skills/competences
- Opportunity to learn/improve a foreign language
- Enhancing future employability in the home country and abroad
- Opportunity to develop personal skills, such as adaptability

The students signed a Learning Agreement with defined Learning Outcomes – generated from the matrix – before their mobility period, in which it was clearly set out what was to be learnt during the mobility period and how it would be recognised. Thanks to THEME hospitality/cook matrix the sending and receiving institutions and the participants knew what they were expected to do and learn during the training abroad.

To realize internships and as a result of the mapping we agreed on selecting the three Competence Areas of the matrix:

1. Purchasing, costing and stocking
2. Composition and planning of menus
3. Production of menus

For each area we identified Competence Development Steps levels 1 and 2.

3.2.2 Advantage of the Matrix with Well-Defined Partial Competences/Learning Outcomes

The instruments developed during the project were tested in mobilities and the sending and receiving companies were asked for a feedback. The benefits for the different groups involved in mobilities are the following:

For the sending institutions, either the full-time VET colleges or the training companies and the VET colleges, the matrix offers the opportunity to clearly define the target competences and to have detailed agreements of the Learning Outcomes of the students. This helps to avoid discrepancies concerning the expectance between the sending institution, the student and the training institution and thus avoids disappointments. The students are aware of their existing competences and know which ones they want to develop or to improve. By this, their ability for self-reflection is improved. The expectations concerning their internship are clearly defined and incertitude is minimized. One of the German students who did an internship in Alba, Italy, reports concerning her experience: „In the beginning I was afraid because of the language problems but it was less difficult than expected because there was a comprehension by working together. I acquired expertise which I wouldn't have got in my training company. I became acquainted with a new working culture and had high personal benefit."

For the receiving institutions (companies) the same is applicable. By clearly defined competences and a self-evaluation of the trainees a successful matching between sending and receiving institutions is easier. The THEME instruments help to improve the prerequisites for long-term cooperation and the building of a network between VET colleges and training companies – receiving and sending trainees. For the companies it becomes easier to accept a foreign trainee who probably could be a future employee in the training company. Altogether the instruments ensure and possibly increase the quality of internships abroad. In the German case of dual VET system, the option to have well-defined Learning Outcomes for the German VET student and the possibility for the training company to define the content made it easier for the training company to release their students for the internships. The EUROPASS mobility as a document certifying an internship becomes more meaningful when it is based on the matrix and certain assessments. It concretely describes the competences acquired during an internship, the professional ones as well as the personal and social ones so that the student can be proud of them and use the EUROPASS mobility for future job applications.

3.3 Electrical Engineering/Electronics

by Martin Sorger, Germany

3.3.1 VQTS Matrix for Electrical Engineering/Electronics

The basis of the development of the Partial Competences/Learning Outcomes in the THEME-Project in the vocational field of electrical engineering/electronics is the Competence Matrix electrical engineering/electronics. This Competence Matrix was one of the results of an earlier Transfer of Innovation Project, the VQTS II project (Annex 8.1).

3.3.2 Mapping of National VET Programmes

One goal of the THEME project was to define Partial Competences/Learning Outcomes and to evaluate the description of the Partial Competences/Learning Outcomes through mobilities between the partners of the electrical engineering/electronic group. The Competence Matrix of electrical engineering/electronics includes the competence description of a large number of different professions in this field. But each of the different professions provides only a part of the competence descriptions shown in the Competence Matrix of electrical engineering/electronics. So in a first step each partner of the electrical engineering/electronics group had to compare the competences described in the units of the matrix with the competences described in the national curricula of the professions in the field of electrical engineering/electronics which are taught at the vocational colleges of the respective partner. In this way, relevant units of the matrix were identified by each partner and marked with different colours. This process is called mapping. In Annex 8.2 you will find an example of mapping of Finland.

3.3.3 Overlapping

In a second step the mappings of all project partners of the electrical engineering/electronic group were compared to each other to identify those units who will be marked from more than one partner. This process is called overlapping, and the overlapping was done by the mapped matrices of Finland, Germany, Italy, the Netherlands, and Spain. Then, those units have been marked, in which mobilities are planned between Germany, Italy, and the Netherlands on the one side and between Finland and Spain on the other side. Annex 8.3 shows the result of this overlapping process for Finland, Germany, and Spain.

3.3.4 Partial Competences/Learning Outcomes

The partners of the electrical engineering/electronic group developed five to six Partial Competences/Learning Outcomes for the relevant units of the matrix. As an example the development of Partial Competences/Learning Outcomes will be described for unit one of the first core working process (see also Annex 8.4). The core working process is in unit 1.1: „Preparing, planning, mounting, and installing electrical and/or electronic systems for buildings and industrial applications. The corresponding competence description is: „He/She is able to prepare and carry out simple electrical and electronic installations (e.g. cables, electrical outlets, connection and distribution systems, modular electronic components, computer components) as well as to carry out and check the necessary wirings and mountings."

Detailled description of the Competence Development Step by defining Partial Competences/Learning Outcomes:
To be able to prepare and carry out simple electrical and electronic installations (e.g. cables, electrical outlets, connection and distribution systems, modular electronic components, computer components), it is necessary to:

- control safety rules on the job site especially to avoid electrical shock (Partial Competence/Learning Outcome 1)
- select the equipment and tools necessary to fulfill simple installations (Partial Competence/Learning Outcome 2)

To be able to carry out and check the necessary wirings and mountings, it is necessary to:

- process wiring of simple installations according to a given circuit diagram (Partial Competence/Learning Outcome 3)
- process mountings of simple devices according to a given circuit diagram (Partial Competence/Learning Outcome 4)
- check electrical installation by visual inspections (Partial Competence/Learning Outcome 5)
- undertake a basic functional test (Partial Competence/Learning Outcome 6)

With these six Partial Competences/Learning Outcomes the general competence description of unit 1.1 is described precisely to document and to evaluate a competence growth of a learner. All Partial Competences/Learning Outcomes are available in the THEME database.

3.4 Mechatronics

by Till Piontek, Germany

A workgroup of seven people was created for the following work processes, with representatives from Finland, Germany, Italy, Lithuania, and the Netherlands. The following goals were to be reached during the course of four work meetings:

- Extending the Competence Development Steps by generating Partial Competences/ Learning Outcomes, which enables efficient recording of the trainees' progress during an internship. The country-specific scope and education plans were used as a basis for the generating process
- Examination of the extended Competence Matrix through experts from schools and companies from the participating partner countries
- Usage and trial of the Competence Matrix in the context of internships abroad. The internships would last four weeks. The participants would be in the second year of apprenticeship and older than eighteen. For organisational reasons, the most sensible time for testing the matrix was April to June 2015
- Usage of assessment tools and database developed through the THEME project

3.4.1 VQTS Matrix for Mechatronics

By focusing on work processes, the VQTS approach aims at eliminating difficulties that arise when attempting to compare qualifications and learning content. This ensures to identify and to categorize progress made by trainees during their internships abroad, despite national differences in scope and structure of job education.

The VQTS matrix for mechatronics is composed of 9 Competence Areas:

1. Maintaining and assuring the reliability of mechatronic systems
2. Installing and dismantling mechatronic systems and facilities
3. Installing and adjusting mechatronic components in systems and production lines
4. Designing, adapting, and building mechatronic systems and facilities on the basis of client needs and site plans
5. Putting mechatronic systems into operation and providing clients with technical and economic support
6. Supervising and evaluating both the process sequences of mechatronic systems and facilities and the operational sequence (including quality assurance)
7. Installing, configuring, programming and testing hardware and software components for control and regulation of mechatronic systems and facilities
8. Preparing and distributing the technical information for adjustment of each enterprise's mechatronic systems
9. Diagnosing and repairing malfunctions with mechatronic systems and facilities, advising clients on avoiding malfunctions, and modifying and expanding mechatronic systems

These Competence Areas are supplemented with three to six Competence Developement Steps.

3.4.2 Expanding the Competence Matrix through Partial Competences/Learning Outcomes

In order to test the Competence Matrix, participants initially found it useful to develop Partial Competences/Learning Outcomes only for selected Competence Areas. The following fields were agreed upon:

1. Maintaining and assuring the reliability of mechatronic systems
2. Installing and dismantling mechatronic systems and facilities
3. Installing and adjusting mechatronic components in systems and production lines
7. Installing, configuring, programming and testing hardware and software components for control and regulation of mechatronic systems and facilities

For each assigned Competence Development Step, the project participants extracted typical job processes and skills from various national teaching plans and from conversations with trainee teachers in several companies. These were then discussed in the group, who then decided, in overarching consensus, on four to six Partial Competences/Learning Outcomes. Thus, for the first Competence Development Step of Competence Area 1, the following Partial Competences/Learning Outcomes were formulated:

- He/She is able to clean and preserve mechatronic components
- He/She is able to grease mechanical parts of mechatronic systems (e.g. slide bearings)
- He/She is able to check and fill up liquid levels in mechatronic machines (e.g. gear oil, hydraulic oil)
- He/She is able to replace expendable parts and auxiliary supplies in a mechatronic system (e.g. gaskets, expandable parts of drive components)
- He/She is able to readjust adjustable parts in a mechatronic system (e.g. chain tension, friction belts)
- He/She is able to add work results in an existing maintenance plans guided by a supervisor

This Competence Matrix was translated into various languages and assessed by several companies on its effectiveness in identifying competences gained by trainees during an internship abroad. The matrix was then adjusted according to the results of these assessments.

3.4.3 Practical Testing

In preparation for the evaluation of the Competence Matrix for mechatronics, a total of 24 EU-internships for mechatronics were planned and executed in Finland, Germany, Italy and the Netherlands. In general, the trainees very positively rated their experiences. All participants felt that they had been thoroughly prepared for their trip by their teachers. Furthermore, they were very content with the reception and the care that they received in their host country. The four weeks time-frame was considered adequately for an internship by the students. The host companies already had a lot of experience in supervision and education of trainees, as they have their own national education systems and have taken part in EU-internships in the past. Due to the Competence Matrix it was easy to agree on learning content and activities. The companies were pleased with the process of the internship. At the end of the internship, the Competence Matrix was once again used to document trainees' increases in competence.

The companies as well as the trainees gave a positive feedback regarding the organisation and the process of the internship. As the entire process of preparation and organisation was taken care of by the schools, the companies did not have a lot of work in this respect. This aspect encouraged the participating companies to take part in a future internship.

Trainees and supervisors did not have enough time to become familiar with the software, which was still under reconstruction when the internships took place. Therefore, only limited use was made of the database which was developed for preparation, execution, and evaluation.

4. Evaluation of Results

by Furio Bednarz, Italy

4.1 Aims and Sources of the Evaluation

According to the quality assurance plan, THEME project has been monitored and evaluated by an independent consultant, working as critical friend and providing the whole partnership with hints and suggestions deriving by his external regard. The evaluation dealt with project management processes, and with the achievements under the lens of quality of deliverables, taking into account:

- VQTS Competence Matrices referred to 4 sectors: trade, hospitality, electrical engineering/electronics, mechatronics
- Learning Units (ECVET based) tested in the framework of mobility internships
- Assessment manuals and tools (inspired by the TRIFT Model)
- Certification or validation means, also tested in the framework of mobilities, based on the EUROPASS Mobility

The evaluation particularly considered the extent to which achievements of the project are coherent with EU mainstream policies/tools and helpful for implementing EQF and ECVET principles, the guidelines for validating informal and non-formal learning, diverse measures fostering mobility. At the same time we followed a multi perspective approach, considering both strategic priorities of the call (if and to which extent they were coherently pursued by the project) and expectations of actors and stakeholders. Project outcomes have been in fact evaluated considering their global pertinence, coherence and effectiveness with project aims and expectations of the partnership. Sources of the evaluation were monitoring data (providing evidence of progresses made in line with the work plan), feedbacks of the partners, collected through the discussions held during the meetings (to which the evaluator participated) and through four online evaluation surveys, realized immediately after each transnational meeting, and finally the results of two online surveys realized during the piloting phase, involving external experts and a sample of apprenticeship who participated at mobility projects in which THEME principles and tools have been tested. Reactions and opinions of stakeholders and external actors enable us to define at a first glance usefulness, usability and added value of project deliverables, formulating at the same time some remarks useful to improve exploitation possibilities in the next future (see also Chapter 6 Perspectives).

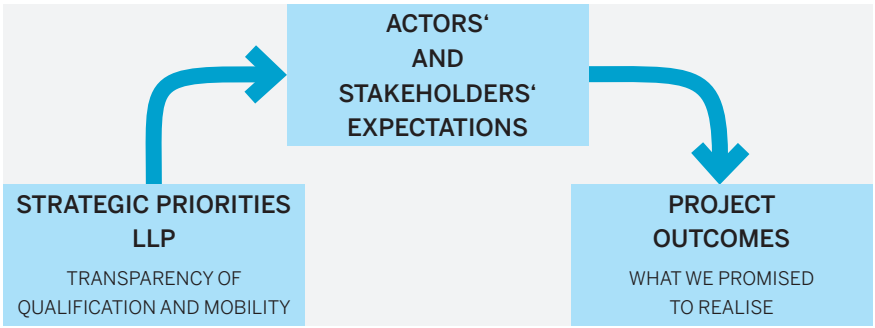

Figure 13: Rationale of the Evaluation by ECAP
ECAP = The ECAP Foundation is a non-profit charitable institute for adult education and research which was founded by the Italian labour union CGIL and has been active in Switzerland since 1970.

4.2 A Challenging and Well Managed Project

THEME was really an ambitious and complex project. A wide and articulated partnership, including both members of solid existing networks of institutions active in mobility and a certain number of "new comers", less experienced in this field, represented a great variety of national contexts; seven partner countries (Finland, Germany, Italy, Lithuania, the Netherlands, Slovenia, and Spain), and four key professional sectors were involved (hospitality, foreign trade, electrical engineering/electronics and mechatronics). A very experienced coordinator succeeded in managing it safeguarding a good balance between participatory efforts and leadership, in order to avoid from one side the disengagement of some partners, and from the other side the negative impacts deriving by the wide range of diversities to deal with: diversity between learning cultures, interests, convictions, levels of expertise, and so on.

The project reached the expected results. The elaboration of Partial Competences/Learning Outcomes – or more detailed units of Learning Outcomes – on the basis of the four sectorial matrices proved to be a hard and complex work, particularly in sectors in which the methodology was relatively new, and the partners were less familiar in dealing with the tool to be transferred (VQTS matrix). Four working groups have been established for the scope, and met several times. The final result, after diverse steps of refining, has been reached at the end of the first year, with the delivery of the four final matrices. In the meanwhile training design and assessment tools (WP6), to be piloted in the framework of mobilities, have been elaborated, exploiting the results of previous initiatives on which THEME draws and merging some products and tools with the ECVET toolkit available online (http://www.ecvet-toolkit.eu/). The organisation and planning of mobilities has been discussed in two additional meetings. The project set up effective dissemination and exploitation tools. Flyers have been printed, the website is informative (www.theme-eu.net), and also the internal area works well. The data base designed for facilitating the organisation of mobilities has been finally delivered, demanding hard investments, and it includes now a range of tools for planning mobilities, defining learning agreements, assessing and certifying Learning Outcomes. The whole set of deliverables has been concretely tested in exchanges and mobilities organised by the partners, paving the road for further exploitation of results. Online surveys realized immediately after each transnational meeting provide evidence of a good project management. Representatives of all consortium members and sectorial work groups filled in the questionnaires (as an average 25 to 30 respondents each survey), showing the high degree of satisfaction of participants with respect to a number of issues related to the organisation, management and achievements of the project. The surveys included a dozen basic questions (based on a Likert scale), plus a certain number of open questions, focusing on deliverables, progresses and challenges faced by the project.

Summing up, both, experts and learners, agree on the relevance of the project's principles: VET students' mobility enhances in any case emotional and relational dimensions of the learning process, and it's a motivating experience for the trainees. But it has to be better rooted in the whole learning process, and by this way it has to be valued and better considered as a fundamental means for upgrading skills and competences also by VET institutions, who are sometimes a bit reluctant. This result can be achieved fostering networking between experienced and less experienced institutions, between sending and hosting organisations, enlarging the area of organisations sensitive and ready for mobility. It implies to improve the quality of preparation, planning and management of internships abroad, to ensure a good assessment and documentation of Learning Outcomes deriving from mobility, to facilitate experiential and reflective learning process through which the VET students can develop learning to learn capabilities, a key meta-competence of the future.

The evaluation helps to identify strengths and challenges emerging by the project, in order to let the partnership further improve the tools already set up, and build up solid perspectives of exploitation.

THEME faced and will continue to face some conceptual and political challenges:

- The difficulty to ensure a coherent implementation of a learning outcome approach, moving from a holistic approach to qualifications (clearly present in the VQTS Model and at the basis of central European learning cultures)
- The consequent difficulty to pursue the unitization of learning pathways
- The difficulty to foster transparency and transferability of the results achieved in mobilities, without setting up a common system for assigning a value to them – despite the availability of good assessment tools and alternative certification means

Partners seem to be aware of these challenges. Their concerns focus on obstacles deriving from the diversity between learning cultures and legal frames, overlapping between expected deliverables and already existing products (re-inventing the wheel), complexity and scarce usability, in a realistic and pragmatic way, of tools provoking an additional (double) work in implementing mobilities, difficulties in ensuring the take-off of mobility projects, in the new framework defined by Erasmus plus (a programm investing a lot in mobility, but in a critical context of implementation).

There is a close link between the challenges faced by THEME, the overarching European goal of fostering mobility of the students also in the VET domain, and the implementation of EU mainstream policies and principles, and above all of the ECVET. Monitoring reports on the implementation of the ECVET, yearly issued by CEDEFOP, provide a clear image of these challenges, with which the project should cope in order to ensure the exploitation of its results. The last CEDEFOP report speaks of an increase in ECVET readiness in most of the EU countries. Member states „have progressed in putting in place the conditions necessary to implementation. However, full and systemic implementation is still far off in most member states, despite agreement with main ECVET principles and an overall commitment."

The report identifies convergences and divergences concerning different issues and components of ECVET. „There is an agreement on the importance of the principles underlying ECVET, namely the unitisation (or modularisation) of educational systems, and the description of qualifications in terms of Learning Outcomes. This also extends to the importance of easing the recognition and transferability of Learning Outcomes". This agreement – however – is not totally homogeneous, and countries characterized by holistic approaches to qualifications pay some difficulties in implementing flexible systems based on units and accumulation of credits.

In general member states are giving a priority to the elaboration of NQFs, based on the EQF, in order to prepare the ground for ECVET, through the description of qualifications in terms of Learning Outcomes. ECVET is traditionally linked to the development of mobility, through the recognition and transfer of Learning Outcomes achieved be the learners in one country to another one. Most of the countries, however, „increasingly see ECVET as a tool for reform and for aligning qualifications to Learning Outcomes, as well as for engaging stakeholders further in VET development and design"; at the same time ECVET appears to be only a component of a complex and articulated set of tools, expected to work together.

Critical points – underscored by the CEDEFOP report, but confirmed also by our experience in THEME – particularly emerge when we move from the acceptance of general principles of ECVET, to its actual implementation. „Work is needed – states the CEDEFOP report – on the synergies between the tools, making them work together and under similar principles. Especially relevant for ECVET is the relationship with ECTS, since two different types of credit arrangements might cause confusion to the citizen that should be the ultimate user and beneficiary. Having two types also goes against increasing flexibility and permeability in the system. This shows another tension observed in the monitoring, the difficulty in dealing with credit points: there seems to be no agreement on their usefulness. However, not considering a point accumulation system might hinder the benefits of the transferability and portability of the Learning Outcomes, since the validation process might require more work than if points were automatically transferred".

Looking at the perspectives of THEME, it seems clear that the exploitation of project deliverables will largely depend on a convergent evolution of national VET systems towards the adoption of Learning Outcome oriented descriptors of qualifications and curricula, and towards the flexibilization of learning pathways (including their unitization). In Germany this is for instance foreseen for all professional regulations, after the approval of the new NQF (June 2014), and a large debate is opened on the future of workplace learning arrangements in the dual system. In the meanwhile, important progresses – interesting to be considered, because they pave the road to a larger exploitation of methods and tools developed by THEME – occurred at the European level in the field of Learning Outcome orientation of VET systems. The implementation of National Qualification Frameworks inspired to a Learning Outcome approach, and the consensus on ECVET principles, is progressing a lot. On the other hand the setting up of actual measures implementing the Youth Guarantee policy is also expected to enhance the need of instruments and methods facilitating the transition between education, training and work experience, which represents a focus point in the THEME project. And last but not least the debate concerning the development of quality assurance system in VET – according to the EQARF guidelines – creates the premises for a positive exploitation of methods conceived for improving mobilities, transparency and transferability of Learning Outcomes.

All these positive external factors could consolidate the sustainability of project achievements beyond the conclusion of the initiative, if a successful dissemination and valorisation effort will be made even after the conclusion of the project, and if the consortium will cope also with doubts and perplexities emerging by some of the partners, referred to the sustainability and usability of the tools developed by THEME.

On the other hand the success of THEME will be strictly related to the evolution of mobilities towards a more articulated landscape, in which short term internships abroad – characterizing so far the development of mobility in VET – could be better integrated in the whole learning pathway, and could be complemented also by more ambitious experiences, of middle and long duration, giving life to proper international qualification pathways.

THEME elaborated in fact methods and tools whose added value would emerge in a more clear way if internships could be planned with enough time and resources both by sending institutions and hosting companies, without the limitations actually hampering the implementation of structured mobilities.

5. European Added Value

by Monique Jordense and Rob Versteeg, the Netherlands and Barbare Krajnc, Slovenia

5.1 General European Added Value

Vocational education and training (VET) is receiving increasing attention from European decision makers due to its ability to bridge the worlds of education and work. Work-based learning, in particular work placement type training, is seen as a way to tackle the current all-time high youth unemployment rates especially under youngsters. Reform of VET systems can ensure a smoother transition from education and training to work, equipping learners with the skills they need. A key issue of VET reform is the integration of a high quality work-based learning element in all initial VET programmes as well as a good articulation between VET, the labour market (i.e. companies) and the wider education system. Through the strategic framework for education and training, EU countries have identified four common objectives to address the following challenges by 2020:

- Making lifelong learning (LLL) and (transnational) mobility a reality
- Improving the quality and efficiency of education and training
- Promoting equity, social cohesion and active citizenship
- Enhancing creativity and innovation, including entrepreneurship, at all levels of education and training

The THEME project is worked on those EU-2020 challenges: THEME contributes to the improvement of LLL strategies of students, individuals and workers. It provides a basis to facilitate and improve mobility in a quantitative and qualitative way.

Promoting LLL and mobility: THEME aimed at improving mobility at EU level. By stimulating mobility, we stimulate people to learn competences in a context abroad which they would never have gained when staying in their home country. Contributing to employability of young people: Mobility stimulates also LLL and employability as it makes people more mobile during their training or working career, leading to more flexible and adaptable workforce on the labour market. THEME contributes to competitiveness and employability as the mobility environments are work placement companies. Work based learning and focusing on Learning Outcomes are the best ways to lower the gap between the labour market and education. The mobility of VET students increases their chances on the European labour market, strengthens their personality and European identity.

The objective to increase the mobility rate of VET students up to 6% until 2020 can be achieved by assuring more trainees of the benefits of an internship abroad. In addition it is also necessary to convince companies to enable mobilities to a broader extent. There is a lack of transparency concerning the possibilities in vocational education and training in the different countries. Especially the recognition of long-term internships abroad is still insufficient. Furthermore the organisation of internships abroad involves time-consuming procedures. In the project THEME there are instruments created and improved to simplify the operational management of internships abroad. Furthermore the implementation of the ECVET process is facilitated. A quality assurance of work placements abroad and their recognition is enhanced. The matrices in the sectors trade, hospitality, electrical engineering/electronics and mechatronics are improved and the Partial Competences/Learning Outcomes are defined and integrated into a database. These instruments make the organisation for the sending and receiving partner and the guiding during the work placement for the tutor more transparent and easy.

The European added value of THEME is the improvement of VET students‘ mobility by facilitating its organisation. By supporting Europe wide VET teachers, exchange of coordinators and responsible persons in companies and facilitating exchanges in general, there will be a rising amount of student mobility’s. It will be much easier to organise European exchanges because Learning Units are comparable and uncomplicated.

5. Added Value

European Added Value

By participating in the validation of the VQTS matrix and the development of Partial Competences/Learning Outcomes, the companies have the possibility to influence the Competence Profiles in their branches based on a European framework. The setup of a variety of Competence Profiles based on matrices ensures an expansion and establishment of sectors across national boundaries. By defining the units of the VQTS matrix the companies can evaluate the qualification of applicants more precisely. The advantages for all partners are the further development of training opportunities all over Europe and facilitation of students‘ mobility in more European countries. Training opportunities and its assessment and herewith its validation and recognition will be improved.

Another European value is the intensifying of existing contacts and building a network of engaged partners in mobility. With the project there will be a transfer of successful instruments and projects results to and between different countries and branches.

Last but not least all the instruments supporting transparency in mobility mentioned above are supported via a website which provides a common platform for educational organisations, companies and other stakeholders. The website developed in the THEME project is an online tool which enables all partners in different countries to share the important data and create all documents needed to support activities in student mobility. The project will furthermore lead to a European wide basis for recognizing and validating informal acquired competences.

5.2 Added Value for Vocational Colleges – Perspective of THEME Project Partners

by Pilar de la Fuente del Rey, Spain and Ulla Pantsar, Finland

THEME project has been of great benefit to project partners for establishing a new European network of experts in VET, providing us with better understanding of different education systems and cultural background as well as the views of implementation of VET according to high EQAVET standards. During this project, we agreed upon the tools to facilitate the realization of student mobilities, the assessment of Learning Outcomes and recognition and validation of competences acquired during mobility period. The credit transfer process, analysing Learning Units and Partial Competences/Learning Outcomes in partners' vocational curricula, gave us an insight for developing more efficient and flexible VET in Europe. The student got more and better employment opportunities as benefit throughout Europe. The schools benefitted from good international contacts, curricula development and the exchange of good practices in ECVET; they became more knowledgeable and open for European-wide company cooperation. International cooperation is a requisition in today's education and training of both young and adult students because the working life, business and industrial production is functioning in a global context. The big multicultural companies and their smaller subcontractors functioning on a more regional level need internationally competent workers.

Mobilities of students and teachers facilitate a better insight of European working life and thus, the future workers have better skills and competences for decision making and developing working processes. Mobilities develop, first and foremost, the lifelong learning skills of participants, those being e.g. adaptability, self-esteem, problem-solving skills, team learning, communication and language skills and other skills necessary for managing their lives better. Good command of language and communication skills enables the employees to work in multicultural and international environment. As educational institutions, our goal is to provide our students with the best human capital and the means for a successful working and personal life.

6. Perspectives of Instruments and Measures Developed in the THEME Project

by Vidmantas Tutlys, Lithuania

We can discern short-term and long-term perspectives of the instruments and measures developed in the THEME project. Short-term perspective of the usefulness of these instruments is mainly related to their application by the VET institutions, enterprises and other stakeholders executing and organising concrete mobilities and exchanges of the VET students. Short-term usefulness and application of the latter will contribute to the accumulation and development of experience of using these instruments, as well as to the strengthening of the trust of users in them, what will open the possibilities for their long term perspectives and impact.

Long-term perspective of the application of these instruments and measures concerns not only the level of institutional practices of mobility, but also the policy level, when these instruments will be used for the implementation and development of the national and European policies related to mobility of VET students and learners.

What defines these perspectives of the THEME products?

The key factor is the correlation between the problems and challenges of development of mobility in the VET systems from the one side and the impact of these instruments for development of the mobility from the other side. Here we outline the range of problems and challenges in development of mobility in the VET systems also looking to the impact of THEME products dealing with these problems and challenges.

What is needed to ensure the achievement of the analysed perspectives of the instruments developed by the THEME project?

The project THEME aims to support VET teachers or exchange coordinators by offering above mentioned and analysed instruments to facilitate their work, as well as to assure the quality of VET mobility and to contribute to its validation and recognition regarding the ECVET guidelines. The main target groups of the project are teachers responsible for mobility at vocational colleges, trainees whose mobility will be simplified and companies that will benefit from a better transparency. Referring to this, the achievement of the perspectives of instruments developed by the THEME project requires different actions and contributions. First of all, it depends on the implementation of the project products in the everyday practices of organisation of mobilities of the VET students. Competence Matrices have already been rather widely tested and implemented in the VET curriculum design and mobility practices in a number of EU Lifelong Learning Programme projects. However, Competence Matrices with Partial Competences/Learning Outcomes still require wider dissemination and exploitation by providing essential know-how and methodical guidelines to VET teachers and curriculum design experts on how to develop these instruments. Competence Matrices with Partial Competences/Learning Outcomes developed in the THEME project can serve as examples for development of such matrices in the other occupations and sectors, but still experts and institutions involved in this undertaking will need the methodical support, that can and should be provided by the partners of the THEME project. One possible solutions of this problem could be initiation of the specific projects of mobilities and development of know-how to VET teachers and experts. The TSMT is a universal instrument for the management and self-management of organisation of mobilities of VET students and learners. Despite of that (or because of that), the usage of this instrument in the mobility practices also requires additional methodical support and guidance to users. Therefore the functioning of this instrument will largely depend on the provision of training and methodical support to the users. It is also important to disseminate the know-how on the instruments developed by the THEME project to the ECVET expert groups in the countries. These experts currently struggle with the search and development of instruments and measures for design and implementation of the ECVET credits in the national VET systems and practices and present a very perspective target group for the usage and further development of THEME products.

6.1 Short-Term Perspective The level of implementation of mobility practices at the VET establishments and in enterprises.	
Problems and challenges of development of mobility in the VET systems	**Real and potential impact of the instruments and measures developed in the THEME project**
Lack of instruments and measures for defining and adjusting VET curricula or parts of it for the purpose of organising mobilities for VET students.	The competence matrix presents a methodologically sound and convenient instrument for the standardisation and comparability of the VET curricula, especially due to its orientation to work process requirements. However, the original versions of the Competence Matrices require further adjustments for the application for short-time mobilities of VET students. One result of the THEME project is, that the Competence Matrices in the fields of trade, hospitality, electrical engineering/electronics and mechatronics are structured in Partial Competences/Learning Outcomes or Learning Units, thus making them suitable instruments for the design and adjustment of curricula for short-time mobilities. These Competence Matrices also serve as example for the development of the new matrices with Partial Competences/Learning Outcomes in the different occupations and sectors.
Comparatively complex and cumbersome procedures of the organisation of mobilities of VET students and related data/documents' management reducing the motivation of students and VET institutions in this field.	These problems are targeted by the TSMT, which simplifies the tasks of administration of mobility projects by providing access to learners, intermediary, sending organisations and internship host companies to a range of support management tools and resources available online in simple-to-use formats. This portal allows to access and to create needed information and documents for organisation and management of mobility at all stages of mobility programme development and it is adjusted to all kind of users from the learners and new comers in the field of mobilities to managers of mobility programmes. This instrument permits to automate mobility management procedures, to monitor the overall activities of mobility programmes, to store all the information in a single tool thus guaranteeing a quick access to data. Host companies can use it for defining the internship programme by selecting needed Partial Competences/ Learning Outcomes to be performed by the learner and for the assessment of learner's performance and competences. Learners can use this portal for the preparation of mobilities, getting information about intermediary organisations, preparing learning agreements, writing reports of their mobilities, sharing their experiences with other trainees and executing self-evaluation of acquired competences. The portal creates the potential to become a rather universal tool for management of mobilities ensuring active involvement of all participants (VET providers, host companies, learners) in this management.
Lack of inter-institutional trust between the VET providers in the different countries creating obstacles for effective organisation of mobilities of VET students.	This problem is targeted by both of the above mentioned products of the THEME project. The application of the work process based Competence Matrices with the Partial Competences/Learning Outcomes provides the neutral platform for the mobility related curriculum design and creates the basis for the comparability of competences and Learning Outcomes acquired during the mobility programmes. Competence Matrices with Partial Competences/Learning Outcomes are also helpful for the identification of the competences that complement and improve the VET curricula of the VET providers involved in the mobility programmes. The TSMT facilitates inter-institutional trust between the VET providers in the different countries by making procedures of the organisation of mobility programmes more transparent and clear from the one side and increasing access to the management of mobilities to all involved and interested participants (trainees, VET providers, hosting companies) from the other side.

6.2 Long-Term Perspective The level of mobility development of VET students and learners and related national/European policies.	
Problems and challenges of development of mobility in the VET systems	**Real and potential impact of the instruments and measures developed in the THEME project**
The differences of VET systems and their country-specific rules and instruments in the fields of curriculum design, organisation of training, application of pedagogical methods and approaches, assessment of competences lead to lack of transparency and comparability of these issues and complicate the international recognition and validation of competences and Learning Outcomes.	This challenge cannot be dealt and solved in a complete way, but in parts, by creating conditions and measures that increase transparency and comparability of the VET systems and the country-specific rules and instruments in the fields of curriculum design, organisation of training, application of pedagogical methods and approaches, assessment of competences. International comparability of qualifications is being tackled by the different instruments including national qualifications frameworks and the European Qualifications Framework for Lifelong Learning as well as the ECVET credit transfer system. The products of THEME project, especially Competence Matrices with Partial Competences/Learning Outcomes and the TSMT can significantly contribute to the operationalisation and implementation of the national and European level instruments and measures of comparability of qualifications in the field of mobility of VET students and learners. The discerning of Partial Competences/Learning Outcomes permits to identify more precisely the referencing of these steps to the levels of the NQFs /EQF. The TSMT includes the preparation of the ECVET documentation in the management of mobilities.
Challenges posed by implementation of long-term strategies and policies of the development of VET and lifelong learning in the countries and their implications to the mobility of VET students.	Work process based Competence Matrices with Partial Competences/Learning Outcomes can be used for the design of qualifications and occupational standards and their referencing to the NQFs and the EQF adding to a standardisation and facilitation of the mobility procedures and an improvement of their quality based on the ECVET process. Discerning of Partial Competences/Learning Outcomes also provides favourable conditions for the design of the modular VET curricula. Competence Matrices with Partial Competences/ Learning Outcomes provide suitable common reference basis for the planning of the apprenticeship training process by foreseeing the Competence Development Steps and providing detailed information about the contents of competences developed in the each step. This instrument is also very helpful for the monitoring of the progress of training and formative, as well as summative assessment of the acquired competences. The TSMT also provides the instruments for the development of apprenticeship based VET mobilities, because it is based on work process oriented competences and their elements. Besides, this portal permits to manage mobilities oriented to the modular approach of training.
Methodological and institutional challenges of the introduction and implementation of the ECVET credit system in the countries, difficulties in defining common reference criteria for the assessment and recognition of competences and Learning Outcomes acquired/provided in the VET systems.	Work process based Competence Matrices provide neutral and methodologically sound basis for the comparability of Learning Outcomes, competences and development of the credits in the field of VET, as well as for the definition of common reference criteria for the assessment and recognition of competences and Learning Outcomes. The project THEME contributes to the operationalisation of Competence Matrices by providing examples of these matrices with Partial Competences/Learning Outcomes. The TSMT helps to prepare the complementary ECVET instruments, such as Memorandum of Understanding, Learning Agreement and EUROPASS Mobility.

7. References

7. References

7.1 Bibliographical References

ECVET meets EUROPASS Mobility Documenting Learning Outcomes in mobilities, Impuls 45 Report published by the National Agency Education for Europe and the Federal Institute for Vocational Education and Training)

http://www.trift.eu

http://ec.europa.eu/education/policy/strategic-framework/index_en.html

http://ec.europa.eu/education/policy/index_en.html

http://www.vocationalqualification.net

http://www.ecvet-toolkit.eu/

http://www.ecvet-info.de/_media/Matrix_Cook_DE.pdf

http://www.theme-eu.net

http://smart.theme-eu.net

7.2 Figures

8. Annex: Competence Matrix

8.1 Example of VQTS Matrix for Electrical Engineering/Electronics

THEME

THEME Competence Matrix - Electrical Engineering/Electronics

Lifelong Learning Programme

COMPETENCE AREAS	STEPS OF COMPETENCE DEVELOPMENT			
1. Preparing, planning, mounting and installing electrical and/or electronic systems for buildings and industrial applications	He/She is able to prepare and carry out simple electrical and electronic installations (e.g. cables, electrical outlets, connection and distribution systems, modular electronic components, computer components) as well as to carry out and check the necessary wirings and mountings.	He/She is able to plan, prepare and connect electrical and modular electronic installations. (e.g. energy supply in private and business premises, incl. lighting; alternating and three-phase current; electronic systems as units, wireless LAN, multimedia systems). He/She is able to advise the customer and select the best implementation according to customer specifications.	He/She is able to plan complex electrical and/or electronically networked installations (e.g. systems of energy distribution, building management systems / KNX, regulation and monitoring systems, building access systems, RFID-systems etc.) and fully wire them. He/She is able to configure service and diagnose the functionality of the installation according to customer requirements and for this purpose is able to use computer-assisted tools.	
2. Inspecting, maintaining and servicing electrical and/or electronic systems and machinery	He/She is able to carry out basic and scheduled maintenance tasks, inspections and checks at electrical and/or electronic equipment according to maintenance schedules and predefined instructions (e.g. checking voltage tolerances, changing wearing parts in industrial plants, switching and control systems, electrical machinery, computer systems). He/She is able to use the measuring and testing tools necessary for it.	He/She is able to carry out and document preventative maintenance and alignment tasks at electrical and/or electronic industrial appliances and systems according to established methods of the quality assurance (e.g. continuous monitoring of a CNC machine tool).	He/She is able to analyse and determine availability and condition of electrical and/or electronic systems. He/She is able to analyse influencing factors on reliability and performance of electrical/electronic systems and find causes of malfunctions (e.g. leakage current analysis, power factor correction, EMC analysis).	He/She is able to develop and document maintenance and inspection methods for electrical/electronic systems based on production and service process analysis as well as on quality management and customer requirements. He/She is able to develop related maintenance, inspection and quality assurance plans (e.g. optimizing MTBF of a production line, planning reserve power supply).

8.2 Example of Mapping for Electrical Engineering/Electronics

THEME

THEME Competence Matrix - Electrical Engineering/Electronics
Mapping: Electrical and Automation Engineering, Finland

Lifelong Learning Programme

COMPETENCE AREAS	STEPS OF COMPETENCE DEVELOPMENT			
1. Preparing, planning, mounting and installing electrical and/or electronic systems for buildings and industrial applications	He/She is able to prepare and carry out simple electrical and electronic installations (e.g. cables, electrical outlets, connection and distribution systems, modular electronic components, computer components) as well as to carry out and check the necessary wirings and mountings.	He/She is able to plan, prepare and connect electrical and modular electronic installations. (e.g. energy supply in private and business premises, incl. lighting; alternating and three-phase current; electronic systems as units, wireless LAN, multimedia systems). He/She is able to advise the customer and select the best implementation according to customer specifications.	He/She is able to plan complex electrical and/or electronically networked installations (e.g. systems of energy distribution, building management systems / KNX, regulation and monitoring systems, building access systems, RFID-systems etc.) and fully wire them. He/She is able to configure service and diagnose the functionality of the installation according to customer requirements and for this purpose is able to use computer-assisted tools.	
2. Inspecting, maintaining and servicing electrical and/or electronic systems and machinery	He/She is able to carry out basic and scheduled maintenance tasks, inspections and checks at electrical and/or electronic equipment according to maintenance schedules and predefined instructions (e.g. checking voltage tolerances, changing wearing parts in industrial plants, switching and control systems, electrical machinery, computer systems). He/She is able to use the measuring and testing tools necessary for it.	He/She is able to carry out and document preventative maintenance and alignment tasks at electrical and/or electronic industrial appliances and systems according to established methods of the quality assurance (e.g. continuous monitoring of a CNC machine tool).	He/She is able to analyse and determine availability and condition of electrical and/or electronic systems. He/She is able to analyse influencing factors on reliability and performance of electrical/electronic systems and find causes of malfunctions (e.g. leakage current analysis, power factor correction, EMC analysis).	He/She is able to develop and document maintenance and inspection methods for electrical/electronic systems based on production and service process analysis as well as on quality management and customer requirements. He/She is able to develop related maintenance, inspection and quality assurance plans (e.g. optimizing MTBF of a production line, planning reserve power supply).

8.3 Example of Overlapping for Electrical Engineering/Electronics

THEME

THEME Competence Matrix - Electrical Engineering/Electronics
Overlapping: Common units of Finland, Germany and Spain

Lifelong Learning Programme

COMPETENCE AREAS	STEPS OF COMPETENCE DEVELOPMENT			
1. Preparing, planning, mounting and installing electrical and/or electronic systems for buildings and industrial applications	He/She is able to prepare and carry out simple electrical and electronic installations (e.g. cables, electrical outlets, connection and distribution systems, modular electronic components, computer components) as well as to carry out and check the necessary wirings and mountings.	He/She is able to plan, prepare and connect electrical and modular electronic installations. (e.g. energy supply in private and business premises, incl. lighting; alternating and three-phase current; electronic systems as units, wireless LAN, multimedia systems). He/She is able to advise the customer and select the best implementation according to customer specifications.	He/She is able to plan complex electrical and/or electronically networked installations (e.g. systems of energy distribution, building management systems / KNX, regulation and monitoring systems, building access systems, RFID-systems etc.) and fully wire them. He/She is able to configure service and diagnose the functionality of the installation according to customer requirements and for this purpose is able to use computer-assisted tools.	
2. Inspecting, maintaining and servicing electrical and/or electronic systems and machinery	He/She is able to carry out basic and scheduled maintenance tasks, inspections and checks at electrical and/or electronic equipment according to maintenance schedules and predefined instructions (e.g. checking voltage tolerances, changing wearing parts in industrial plants, switching and control systems, electrical machinery, computer systems). He/She is able to use the measuring and testing tools necessary for it.	He/She is able to carry out and document preventative maintenance and alignment tasks at electrical and/or electronic industrial appliances and systems according to established methods of the quality assurance (e.g. continuous monitoring of a CNC machine tool).	He/She is able to analyse and determine availability and condition of electrical and/or electronic systems. He/She is able to analyse influencing factors on reliability and performance of electrical/electronic systems and find causes of malfunctions (e.g. leakage current analysis, power factor correction, EMC analysis).	He/She is able to develop and document maintenance and inspection methods for electrical/electronic systems based on production and service process analysis as well as on quality management and customer requirements. He/She is able to develop related maintenance, inspection and quality assurance plans (e.g. optimizing MTBF of a production line, planning reserve power supply).

= 1. year = 2. year = 3. year

8.4 Example of Partial Competences/Learning Outcomes for Electrical Engineering/Electronics

THEME Competence Matrix - Electrical Engineering/Electronics with Partial competences/ Learning outcomes

Lifelong Learning Programme

COMPETENCE AREAS	STEPS OF COMPETENCE DEVELOPMENT		
1. Preparing, planning, mounting and installing electrical and/or electronic systems for buildings and industrial applications	He/She is able to prepare and carry out simple electrical and electronic installations (e.g. cables, electrical outlets, connection and distribution systems, modular electronic components, computer components) as well as to carry out and check the necessary wirings and mountings.	He/She is able to plan, prepare and connect electrical and modular electronic installations. (e.g. energy supply in private and business premises, incl. lighting; alternating and three-phase current; electronic systems as units, wireless LAN, multimedia systems). He/She is able to advise the customer and select the best implementation according to customer specifications.	He/She is able to plan complex electrical and/or electronically networked installations (e.g. systems of energy distribution, building management systems / KNX, regulation and monitoring systems, building access systems, RFID-systems etc.) and fully wire them. He/She is able to configure service and diagnose the functionality of the installation according to customer requirements and for this purpose is able to use computer-assisted tools.
	Partial competences/ Learning outcomes:		
	He/She is able to control safety rules on the job site especially to avoid electrical shock.		
	He/She is able to select the equipment and tools necessary to fulfill simple installations.		
	He/She is able to process wiring of simple installations according to a given circuit diagram.		
	He/She is able to process mountings of simple devices according to a given circuit diagram.		
	He/She is able to check electrical installation by visual inspections.		
	He/She is able to undertake a basic functional test.		

Notes

Notes

Notes

Project THEME – Cooperations

Partners	
Germany	Cologne Government Regional Office European Agency for Vocational Education and Training
Finland	Salpaus Further Education Lahti Region Educational Consortium
Finland	The City of Kouvola, Kouvola Region Vocational College
Italy	Area Formazione Fondazione Centro Produttivita Veneto
Italy	APRO Formazione s.c.a.r.l.
Lithuania	Vytautas Magnus University
The Netherlands	ROC Leeuwenborgh
The Netherlands	KCH International
The Netherlands	Endurance
Slovenia	Chamber of Commerce & Industry of Slovenia
Spain	Asociación Catalana Internacionalización del Talento (ACIT)
Spain	Centro Integrado de Formación Profesional Número Uno

Vocational training institutions involved
Adolf-Kolping-Berufskolleg, Horrem
Berufskolleg Bergisch-Gladbach
Berufskolleg Bergisch Land, Wermelskirchen
Berufskolleg Eifel, Kall
Carl-Reuther-Berufskolleg des Rhein-Sieg-Kreises, Hennef
Geschwister-Scholl-Berufskolleg, Leverkusen
Hans-Böckler-Berufskolleg, Köln
Joseph-DuMont-Berufskolleg, Köln

Bezirksregierung Köln
Zeughausstraße 2-10
50667 Köln
Telefon 0221/147-0
Fax 0221/147-3185
eMail poststelle@brk.nrw.de
www.brk.nrw.de