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## Implementation partner countries

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### Finland

Experience, value and impacts in different VET systems: The IT:BSE project produced many useful impacts for Finnish working life and vocational education and training. During the process a new curriculum was planned for Building Service Engineering. It will be taken into use when vocational colleges together with companies plan new study paths according to the needs of working life. IT:BSE-Project raises the quality of work placements abroad. During the process project partners agreed on the learning outcomes to be achieved during the work placement abroad and also on their recognition, validation and assessment. The partners agreed to use ECVET-document Memorandum of Understanding and Learning Agreement to ensure the quality of work placements abroad.

During the IT:BSE project the partner colleges gained better understanding and knowledge about the VET education systems, contents of qualifications, learning outcomes and assessment in partner countries. Partner colleges built a new European network in the field of Building Service Engineering and the cooperation will continue. The colleges agreed to send and receive students for work placement periods and teachers for experts' exchange. Work placement periods were also

carried out during the projects and they raised the interest in working life in Finland and co-operation with it was fastened.

## France

Background and opportunity of the project: The IT:BSE project comes at a particularly opportune moment for the French partnership. The commitments made by France in the 2020 European strategy put the construction industry into a key position. The transition to a green economy requires a number of challenges in terms of energy management with significant changes in professional practices. Local public educational institutions that train future technicians, implement frameworks which are periodically reviewed in consultation with the professional branches. Internships abroad for VET students are planned as a possibility in these frameworks. The IT:BSE project has allowed the French partnership to discover and explore many working objects and to consider new perspectives.

## Major benefits drawn from the experience

The discovery of a new object of knowledge: engineering for energy efficiency.

It is a cross discipline that recently has been structured for engineers' and technicians' training levels. However, the need for a systemic approach to achieve an energy performance was not addressed so far in EQF level 4 trainings effectively.

Thus, our best knowledge of issues relating to the energy efficiency of buildings leads to new pedagogical approaches with our students.<sup>24</sup>

The appropriation of a generic tool for identifying skills: the IT:BSE Matrix

The development process of the IT:BSE Matrix has greatly contributed to our understanding of the extent of the field activities that cover the field of engineering for the energy efficiency of buildings. The gradual writing of the IT:BSE competence matrix is a result of the consensus between the partners of the IT:BSE project.

This generic competence description tool is linkable to our national diplomas and can be transposed to degrees of European partner countries.

The IT:BSE Matrix a tool for closer cooperation with partner companies

Engineering for energy efficiency is implemented in practice in companies linked to the project partners. Our good reputation in engineering for energy efficiency has enabled us to develop our cooperation with these companies.

For example, the IT:BSE Matrix has allowed us to rebuild our partnership for the reception of trainees with the engineering manager of an important hospital complex that is emblematic and representative in terms of complexity of energy management. This results in a better definition of operational objectives and evaluation criteria for training periods for our learners or for learners of our European partners.

The IT:BSE matrix: a tool to ensure the quality of VET students' mobility in European partner countries.

The integration of all project partners in the development process of the IT:BSE matrix allowed to build a good level of understanding and a strong level of trust between each other. This ensures the quality of the mobility of learners and provides the recognition of competences gained from these mobilities in their certification path.

Prospects: Our participation in the IT:BSE project opens prospects for European dimension. We consider in particular:

Continuing work on the technology watch on the theme IT:BSE. Indeed, the systemic approach and the „global cost“ analysis are relevant and affect all life stages of a building and all stakeholder levels. These innovative approaches are now shared across Europe and observing their deployment will be a source of inspiration for educational innovations. Continue and strengthen the European partnership engaged in the IT:BSE project. We have already agreed to continue the cooperation with partners by sending and receiving students for training periods. Similarly, we consider the exchange of teachers.

## Spain

The Centro Integrado de Formación Profesional de Mantenimiento y Servicios a la producción has received two plant mechanics of sanitary, heating and air conditioning systems (m/f) from Germany (Adolf-Kolping-Berufskolleg, Kerpen) for a 4-week internship. This exchange turned out to be positive for the students and the training companies. The German students successfully completed a Spanish language course parallel to their stay in Oviedo. Once they (and the company) had overcome the first difficulties of communication the internship was very successful. The students felt well inside the company and the Centro Integrado.

In the plumbing and heating field there were some difficulties to find companies because of the English language for communication. After all, those Spanish companies who received students were finally highly satisfied with the internship. The CIFP de Mantenimiento y Servicios also sent two electrical engineering students to Germany. Also this internship was highly positive, particularly the learning

outcomes in social and personal competences. The students made lots of experiences in cultural life and learned about the differences within the worlds of work in Germany and Spain.

In summary it is very important to have specific and equal procedures of organizing internships as offered in the ECVET concept. So it is fundamental to have equal standards and rules.

## Bulgaria

The participation of the Gabrovo Chamber of Commerce and Industry as a partner at the IT:BSE Project was a great challenge for us for two reasons:

the transition to a „green economy” and the central objective of the ET–2020 Strategy – increase of the energy efficiency and reduction of CO2 emissions – is of great importance for Bulgaria nowadays

Facility Management is an occupational field completely new for Bulgaria. There is a necessity of vocational training in this professional area meeting the required competences. The project promotes the transferability of the acquired competences between the EU member states – an important fact for Bulgaria because of the increasing number of Bulgarians currently living and working abroad

Because of the new, specific terminology we had to define the terms used and to agree on a „common language” in order to facilitate our mutual understanding. Thus, a glossary was developed that was very useful for us because this occupational field is quite new for Bulgaria and the terminology had to be defined more precisely.

The project’s intention to describe the qualifications needed for an occupation in the field of Building Service Engineering (BSE)/Facility Management in a competence

oriented way and to make them comparable. The different vocational systems in Europe demanded completing questionnaires by companies and persons involved in this occupational field. These questionnaires have shown that most companies are not competent in BSE/Facility Management, they are not sufficiently familiar with the legal requirements (rights and obligations of operating buildings, reduction of operating and running costs during the operation etc.). Although the IT:BSE Matrix was developed in collaboration with all partners, some time was needed for its testing until it became a working tool. The internships realized during the project proved that testing is necessary to make the IT:BSE Matrix perfect.

The IT:BSE project demonstrates the advantages of partnerships between representatives of institutions with different positions within the VET system from different countries. This partnership complicates the project work (communication and language problems, different VET systems, different legislation), but the project outcomes and the delivered products are of great value, more precise and transferable between and within the particular countries.

Future perspectives and European added value: The IT:BSE Matrix developed in the project includes several professional qualifications from different occupational fields that can be allocated to different EQF levels. In Bulgaria the matrix can be used for developing/updating of State Educational Requirements for professions in these occupational fields.

Some institutions have already appealed to the National Agency of VET for approval and legalizing of the new profession Facility Manager. It is a profession of present interest for Bulgaria because of the following circumstances:

A great number of the real property is intended for a seasonal use (mainly in the sea and mountain resorts)

A great deal of the real property is purchased by foreigners and Bulgarian citizens as an investment and

it is not used regularly by their owners

But the occupational tasks, respectively the competences of the Facility Managers, are still not clearly defined in Bulgaria. Hence, the IT:BSE Matrix can contribute to solving this problem. The questionnaire – approved by the project partners and tested in their countries – can be offered to the institutions involved in VET as an instrument for competences' identification of employees in the field of BSE. The questionnaires, internship assessment documents etc. can be used as a base for the development of instruments for testing knowledge and skills, respectively for their validation both within the VET and higher education system. The IT:BSE Matrix can be applied for further development of competences acquired by previous education and training in the same occupational field.