



Railway Operation in ECVET

Final Report

Public Part

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Executive Summary

The achievement of the common strategy based on the Commission's recommendation "to create a European railway area by 2020" depends on the cross border "interoperability" of railway transportation which requires the integration of national rail transportation and training systems. However, various European publications released so far still indicate that rail training centres across Europe appear to be very much nationally oriented, which, as a result, encouraged the project partners to take steps to seek for a common approach in vocational education and training for railway staff in "operation" job family.

To this goal, the RAILVET project developed a frame training programme in modular system for "operation" job family in railway sector, based on the results of the previous EU pilot project titled "DEPRAST", which was carried out between 2005 and 2007. The frame training programme will be released in electronic format in English and will include the core competences required for railway staff in logistics and train traffic, as well as involving the qualifications needed for inter-module, multi-module and combined transportation.

The frame modular training programme mentioned above was adapted to the European Credit Transfer System for Vocational Education and Training (ECVET) up to the fourth level of European Qualifications Framework (EQF) for the recognition and transfer of the qualifications acquired through formal, non-formal and informal railway training.

Users of the project's products are the formal and non-formal railway training institutions, centres and companies in the European Union, which totally train an estimated 11,000 train drivers and around 20,000 other rail related staff a year for the sector employing roughly 900.000 people. With regard to the ECVET adaptation of the frame training programme, ministries of education, youth and sports, ministries of transportation, vocational qualifications authorities and national agencies are among the long-term target groups.

Depending on the complexity of the issue, special attention has been paid to the selection of the project partners in order for the consortium to include competent institutions that have expertise both in developing VET curriculums and in ECVET implementations as well as having a high capacity for dissemination and exploitation activities and for international cooperation.

The so-called "external railway experts" in the application who were selected from the EU countries not included in the project's consortium but cooperated within the context of the RAILVET project to develop together the frame training programme have increased its European dimension and geographical scope. This cooperation is also expected to increase the attractiveness and acceptability of the project products by the European countries to integrate into their own training systems.

By the end of its lifetime, the RAILVET project achieved to develop the frame training programme for "operation" job family in railway sector up to the fourth level of European Qualifications Framework, with the cooperation of railway experts from Turkey, France, Italy, Czech Republic, Slovakia, England, Austria, Germany, Spain and Finland. A report has also been prepared on ECVET principles and its implementation since in the second year of the project, the consortium mainly focused on adapting the frame training programme to the ECVET system, seeking for

a wider agreement on the content and structure of the training programme at European level.

In addition to the project's website (<http://www.railvet.com>) in English and Turkish and promotional materials for dissemination activities, following events happened during the lifetime of the project:

1. First Railway Seminar on 16-18 February 2011, Ankara-Turkey (2011)	2011
2. First Partner Meeting on 11-12 May 2011, Genoa-Italy	
3. Second Partner Meeting on 29-30 September 2011, Paris-France	
4. First Railway Workshop on 12-14 December 2011, Istanbul-Turkey	
5. Third Partner Meeting on 12-14 April 2012 ,Bratislava-Slovakia	2012
6. Fourth Partner Meeting on 19-20 July 2012 Genoa, Italy	
7. Second Railway Workshop on 03-05 2012 Prague-Czech Republic	
8. Second Railway Seminar 05-06 December 2012, Ankara-Turkey	

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1. Project Objectives

A number of publications and Directives released in the European Union, such as European Commission's White Papers (1996,2001,2006), "Railway Training 2020" report (2007), The Atkin's study (2002) Rail Liberalisation report (2007) and SERVRAIL (2006), have all pointed to:

- the worrying decline European railway sector has been experiencing since 1970s,
- to the low rate of mobility among railway staff and the national character of rail training centres,
- to the "skills gap" caused by the introduction of new European legislation, technological developments and the demographic situation, which European railways need to bridge in order to stay in business,
- the urgent need to take steps to revitalise the European railway transport sector, making it a viable and attractive alternative to other modes of transport,
- to the recommendation of the Commission for the kick-start of a European network of training centres,
- the replacement of a significant number of railway staff in the coming years creating a need to recruit a considerable number of rail staff,
- the fact that as standardisation and harmonisation of rail systems increase, the demand for competences for cross-border operations also increases.

Taking all these facts into account and the Recommendation of the European Parliament and of the Council of 18 June 2009 on the establishment (and on its implementation in EU as of 2012) of a European Credit System for Vocational Education and Training (ECVET), the RAILVET project aimed to develop a frame modular training programme for the job family "operation" in railway sector and to adapt it to the ECVET system, up to the fourth level of the European Qualifications Framework (EQF).

Creating a synergy among the related institutions, organisations and companies, this project achieved the harmonisation of the minimum core competences required for the railway staff for the realisation of the common training approach, which is inevitable for the "interoperability" of railway transportation.

The frame training programme:

- contains the core competences on which an agreement has been reached by the railway experts cooperated within the context of the project so that it could be flexible enough to applied in a European country out of the project consortium,
- is in modular system,
- is for railway staff, namely signallers, switchmen, train chiefs, conductors, ticket sellers, and logistics workers,
- involved the qualifications required for inter-module, multi-module and combined transportation with a specific focus on sea transportation,
- released in electronic format in English and Turkish languages.

2. Project Approach

To assure quality in project implementation, a “Joint Executive Board (JEB)” was set up at the very beginning of the project, to which each partner in the project provided a representative. Acting as a “board of decision-making” during the project’s lifetime for dissemination and exploitation activities, this board:

- prepared and signed a “conclusion report” at the end of each partner meeting, seminar and workshop,
- took an active role to sustain communicative, technical and financial coordination of the project activities,
- made the final decisions in cases of discrepancies,
- checked the completion of the works by each partner stated in the previous conclusion report(s) and clarified the tasks to be completed till the next partner meeting,
- decided on the requests for amendments to be made in project structure and implementation,
- Confirmed the reports to be sent to the Commission.

While the main function of the JEB was so designed as to be internal evaluation, the applicant institution had also an external evaluation for the overall implementation of the project by a specialised, competent institution.

For the efficient management of each workpackage and timely completion of the tasks, one of the project partners was assigned as the workpackage leader, taking into account the nature of the work and outcomes of the workpackage and the specialisations of the partner institution.

The questionnaires and surveys carried out during the DEPRAST project were analysed to clarify the structure of the frame training programme and the key persons from Turkish State Railways and General Directorate of TVET were made responsible for compiling the comments and evaluations of the railway experts on the training programme. They worked with the workpackage leaders in close cooperation to make revisions in the project product.

When talking about a “common approach” in vocational education and training on railway transportation and contributing to the goal of achieving a European railway area by 2020, the vital importance of dissemination and exploitation inevitably arises, and therefore RAILVET regards them as an integral part of the whole process that should be carried out meticulously through the whole project.

The project consortium was designed as to ensure the widespread dissemination and exploitation of the project products. Each partner institution had a good capacity to disseminate the results since most already had strong relations and cooperation with the target groups. In addition to the project’s own website, RAILVET was promoted in the partner institution’ own websites and periodicals, congresses, national and international newspapers, web portals and TV channels.

Two railway workshops, one focusing on the frame training programme, the other on its ECVET adaptation, were achieved in the project's lifetime to ensure the active participation of the related EU institutions outside the project consortium in the development of the training programme for wider EU consensus on its content and structure.

Also two railway seminars, one at the beginning the other at the end of the project, were also achieved to which the representatives of related public ministries, institutions, companies, schools, municipalities and social partners were invited.

Promotional materials, such as posters, brochures, bills, flags were also produced for dissemination activities of the RAILVET project.

3. Project Outcomes & Results

Major outcomes and products of the RAILVET project achieved during the implementation can be outlined as follows:

a) Website:

The project's website (<http://www.railvet.com>) was established and released in February 2011 in English and Turkish languages to promote the project and its activities, results and products. It has public and restricted parts serving as a common platform for communication and relations within (and also outside) the consortium. It is planned to be kept active up to the year 2016.

b) Railway Seminars:

The first railway seminar within the context of the RAILVET project was held in Ankara / TURKEY on 16-18 February 2011 with the participation of nearly 150 representatives of the:

- Turkish Ministry of National Education
- Turkish Ministry of Transportation
- Embassies of the Partner Countries
- Vocational Qualifications Authority – MYK
- Turkish National Agency - NA
- Project Partner Institutions
- Railway Vocational Schools
- Related Stakeholders (municipalities, unions)

The second railway seminar within the context of the RAILVET project was held in Ankara /TURKEY on 05-06 December 2012 with the participation of nearly 170 representatives of the:

- Turkish Ministry of National Education
- Turkish Ministry of Transportation
- Vocational Qualifications Authority – MYK
- Turkish National Agency - NA
- Project Partner Institutions
- Railway Vocational Schools
- Related Stakeholders (municipalities, unions)
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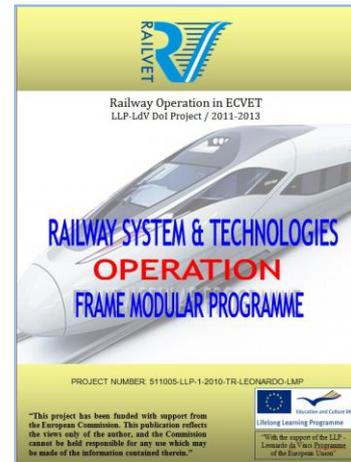
c) General Structure of ECVET:

A report titled “General Structure of ECVET” was jointly developed under the leadership of project partner FVETS, as an initial guide for ECVET adaptation of the frame training programme for “operation” railway job family. The report was a kind of enlarged with comments on the structure and content of the training programme in the second year of the project's lifetime.

d) Railway Workshops:

The first railway workshop within the context of the RAILVET project was held on 12-14 December 2011 in Istanbul / TURKEY with the participation of the representatives of the partner institutions and the external railway experts cooperated within the context of the Project. The content and structure of the training programme were discussed face-to-face by the railway experts.

The second railway workshop within the context of the RAILVET project was held on 03-05 October 2012 in Prague /Czech Republic with the participation of external railway experts cooperated within the context of the Project. Revision of 8 modules was discussed with the experts and the partners:



- MODULE-1: INTRODUCTION TO RAILWAYS
- MODULE-2: PLANNING OPERATION
- MODULE-3: TRAIN PREPARATION AND SHUNTING
- MODULE-4: RAILWAY TRAFFIC MANAGEMENT & OPERATING MODES
- MODULE-5: SAFETY & SECURITY MANAGEMENT OF OPERATIONAL APPLICATIONS
- MODULE-6: RAILWAY FREIGHT TRANSPORTATION
- MODULE-7: RAILWAY PASSENGER TRANSPORTATION
- MODULE-8: VOCATIONAL LANGUAGE

The main objectives of the workshop and the partner meeting that followed were:

- to check the completion of the tasks stated in the conclusion report of the project signed during the partner meeting in Genoa / ITALY,
- to check the expenses, financial documents and dissemination activities realised so far,
- to share and discuss the evaluations by external railway and ECVET experts on the latest form of the training programme,
- to finalise the training programme framework for “operation” job family and its adaptation to the ECVET system,
- to draw a plan for the exploitation of the project products,
- to prepare and sign the seventh conclusion report of the RAILVET Project.

e) Frame Training Programme:

The project partners achieved to develop a frame training programme in modular system in English and Turkish languages in electronic format for “operation” job family in railway sector up to the fourth level of European Qualifications Framework, with the cooperation of railway experts from Turkey, France, Italy, Czech Republic, Slovakia, England, Austria, Germany, Spain and Finland.

4. Partnerships

The products the RAILVET proposes to produce require the project partners to have expertise and experience;

- a) in working at multinational projects,
- b) in developing training modules and curriculum for VET,
- c) in ECVET system and its applications.

Having existing relations with national and international institutions dealing with railway training is also an added value for the project. Therefore, the project consortium was established taking the above-mentioned requirements into consideration.

MEB Meslekî ve Teknik Eğitim Genel Müdürlüğü – MTEGM (The General Directorate of Vocational and Technical Education), the applicant institution, is directly run by the Turkish Ministry of National Education, and is responsible for carrying out all the managerial and educational duties and services at secondary level vocational and technical schools and at other same level non-formal training institutions in Turkey.

It has the responsibility of overall implementation of the project with respect to the administrative and financial issues. It also coordinates and contributes expertise to the development of the railway training programme and its ECVET adaptation. It will integrate the end products into its existing railway training systems at vocational and technical schools under its management.

Turkish State Railways (TCDD) is the greatest public authority whose main function is to operate, expand and renovate the railways, ports, harbours and docks under its management with the help of its 18 expertise units, 7 consultation and inspection units, 7 regional directorates and 5 factories.

TCDD will lead, as well as direct contribution of expertise, the works leading to the development of the railway training programme, using its experience in both operating and providing training in railway sector. It will also integrate the end products into its existing railway training systems in the training centres under its management.

HAK-IS Trade Union Confederation (HAK-IS) is today one of the greatest unions in Turkey, with its 9-affiliated trade unions, It has representations in various national bodies including Vocational Qualifications Authority and has a close relation as a social partner with public institutions and has participated in various projects so far contributing to the development of VET curriculums particularly in railway sector.

Being the only trade union organisation represented the Turkish Vocational Qualifications Authority, HAK-IS will contribute to the ECVET adaptation of the frame training programme and take active role in dissemination activities.

International Union of Railways (UIC) was founded in 1922 with the aim of creating uniform conditions for the establishment and operation of railways. It is the worldwide organisation for cooperation among railway companies, with nearly 200 members from all five continents, including rail transport operators and infrastructure managers, most of the railway companies and companies conducting activities complementary to those of the railways (public transport, caterers, etc).

Being a worldwide railway union, UIC main roles can be outlined in two headings:

- a) contributing to the harmonisation of the core competences in railway “operation” job family, striving to involve as many external railway experts as possible into the project activities,
- b) contributing to the dissemination and exploitation of the project products and results using its existing networks.

National Institution of Technical and Vocational Education (NUOV-NUV*), directly run by the Ministry of Education, Youth, and Sports, aims at providing support for the development of technical education in the Czech Republic. Together with institutions from public administration and the social partners, NUOV has been involved in the development of the Czech National Qualification Framework (NQF).

NUOV provided assistance and feedback to the partners responsible for developing the railway operation curriculum. It coordinated using the project outcomes as an example of good practice for all schools providing technical education and also as a possibility of approach to the implementation of ECVET in the Czech Republic.

**Within the lifetime of the project NUOV has been changed as “Narodní ústav pro vzdělávání, školské poradenské zařízení pro další vzdělávání pedagogických pracovníků” (National Institute for Education, Education Counselling Centre for Continuing Education of Teachers and named as NUV from then on)*

The Italian Shipping Academy- The Accademia Italiana Della Marina Mercantile (AIMM-FAIMM*) is a non-profit organisation which was created to supply the needs expressed by ship-owners and other stakeholders in the shipping sector to fill the grave shortage of highly qualified maritime professionals on board of merchant ships.

**Within the lifetime of the project The Accademia Italiana Della Marina Mercantile has been changed as Fondazione Accademia Italiana Della Marina Mercantile and named as FAIMM from then on.*

The Nautical Institute “San GIORGIO” (ITN-ITTL*) is a technical secondary school for students from 14 to 19 year olds. It also provided training in 2012 on transportation and logistics following the new Italian organization of the secondary schools.

The main task of the Italian Shipping Academy (being upper-secondary training provider) and the Nautical Institute “San GIORGIO” (being secondary-level training provider) helped integrating into the frame training programme the qualifications needed for multi-module and inter-module transportation. ITTL also exploited the products of the project in the school.

**Within the lifetime of the project The Nautical Institute “San GIORGIO” –ITN has been changed as “The Istituto Tecnico dei Trasporti e Logistica Nautico San Giorgio –ITTL” and named as ITTL from then on.*

Foundation for Vocational Education and Training Services (FVETS) is a non profit institution oriented to VET in accordance with the LLL principles. It encourages the educational activities aimed at the youth, teachers, employed as well as unemployed people by means of providing them with retraining courses, organization of exhibitions, competitions and fairs.

FVETS helped analysis of existing ECVET applications in EU and helped establishing the general ECVET structure, the methodological framework, the

guidelines, common method and tools for adaptation of railway operation modules on the main objectives of ECVET and EQF.

5. Plans for the Future

At the very beginning of the second year of the project, the frame training programme developed and the core competences for “operation” job family agreed by the railway experts in the consortium were shared with the railway companies, training centres in the EU and members of the project partner International Union of Railways (UIC), both to seek for a higher level of harmonisation of competences at European level and to revitalise the synergy among the stake holders to this aim, as part of disseminating the results and outcomes of the project.

The main task of the project consortium was the adaptation of the frame training programme to the European Credit Transfer System for Vocational Education and Training (ECVET) under the leadership of the project partner Foundation for Vocational Education and Training Services (FVETS), as it has some experience in its implementation, and accomplished some pilot projects on ECVET in Slovakia.

To this end, past experiences in the European Union in ECVET implementation were examined and other ECVET project owners could be contacted to share experiences and the best practices. The results of all these researches were integrated into the report already produced and titled “ECVET, General Structure” for in-depth analysis of the frame training programme for ECVET adaptation. During this period, railway and ECVET experts worked hand in hand to finalise the structure of the programme and allocate credit points for the best ECVET adaptation. However, this mentioned report could be finalised only %80 rate as the other colleagues in MTEGM couldn't find a proper and completed report in all sources of Sedat's PCs.

The methodological framework including the guidelines, common methods and tools for adaptation of railway operation modules were built on the main objectives of ECVET and European Qualifications Framework for the transparency and recognition of core competences, relative to the adaptation of modules on logistics and train traffic.

These works (%80) and ECVET adaptation of the frame training programme were finalised with the development of the project's end product “Railway Operation in ECVET” during the second railway workshop held in Prague / Czech Republic in October 2012, to which external railway and ECVET experts were also be invited.

Following the completion of the final product, the project partners focused on dissemination and exploitation activities and integrating the frame training programme into the existing railway training systems and applications in their own countries.

The second railway seminar within the context of the RAILVET project was held in December 2012 in Turkey, to which the representatives of the related ministries, schools, training centres and municipalities were invited. Education and transportation ministries, national agencies, vocational qualifications authorities will be informed by e-mails about the outcomes and results of the project.

- As confirmed in the evaluation of the progress report by EACEA experts, the Project consortium has managed a great deal of dissemination activities through their institutional opportunities to reach the maximum number of the target groups. In addition to the project's website, the project partners used their own institutional websites and even the project partner NUV has created

a mirror website (<http://digifolio.rvp.cz/view/view.php?id=5181>) with a RAILVET profile“ on the rvp.cz website, which is the biggest educational website in the Czech Republic visited by nearly 10 000 users (teachers, trainers, schools, professional ect.) in a day for dissemination purposes. The seminars organised within the context of the RAILVET project were also a good platform for dissemination, which also took place in national and international TV channels and media. Articles about the project have been published in various magazines; information about RAILVET has been delivered at various institutional meetings.

- In 2013 Turkish Ministry and TCDD will sign an official letter to be submitted to the Agency to show their eagerness to use RAILVET products and for pilot ECVET implementations in the future in railway. They already started to use project results in the revision of the training modules to be used in TCDD training centres and vocational schools of the Ministry.
- In 2013, HAK-IS would give a letter stating their work in the sectoral committees of the National Vocational Qualifications Authority (MYK) and integrate the project results into railway training programmes for municipalities.
- There were 7 university representatives during the second railway seminar and final meeting of the RAILVET project held in Ankara / Turkey on 5th December 2012. After hearing detailed information on the “operation” curriculum developed by the partnership, they congratulated the partner institutions for the interesting results of the Project and expressed their interest of adopting the curriculum in the railway training departments of their respective universities. A workshop gathering TCDD, Ministry of Education and Universities was planned to be organised in 2013 with the aim of revising secondary and academic level of railway training, but couldn't be realized.
- On 05 November 2012 a Memorandum of Understanding was signed by the Turkish Ministry of National Education and the Italian Ministry of education, university and research for general cooperation in vocational and technical education and training and support the joint projects carried out by the two countries like METALS and RAILVET.
- Nautical School will start training on logistics in 2013-2014 Academic Year and therefore will make use of projects results when revising the content of their training modules. Turkish Ministry and Nautical school will sign an agreement for pilot implementation of the project product through exchange of students.
- FVETS will disseminate the results to the Ministry and railway vocational schools directly, based on the national programmes, and offer schools to use these modules and programmes for students' exchange with partner and other countries.
- NUV will prepare letters to send to vocational schools dealing with transportation with a request of judgement of using the project products in their training.

6. Contribution to EU policies

Depending on its objectives and the nature of its products, the contribution of the RAILVET project to EU policies can be outlined in the following four ways:

- Complimentary to the other European initiatives like the “common licensing regime for train drivers”, the RAILVET project is expected to contribute the realisation of the Commission’s recommendation “to create a European railway area by 2020”, increasing the interoperability of European railway area by harmonising the core competences for railway staff requirements on logistics and train traffic.
- The frame training programme on railway “operation” job family will be on modular basis and flexible enough to be adaptable to the national formal and non-formal training systems in the EU to promote high performance and quality with respect to the lifelong learning strategies making VET in this field more attractive.
- ECVET adaptation of the training programme is directly related to the transparency and recognition of the competences and qualifications of the railway staff in logistics and train traffic.
- As a result, all these contributions are expected to facilitate and increase the mobility of the workers, students and trainees

More specifically, the RAILVET project aims contributions to the following objectives set by the EU:

- The specific objectives of the Lifelong Learning Programme (LLP-Obj-a): “to contribute to the development of quality lifelong learning, and to promote high performance, innovation and a European dimension in systems and practices in the field”
- Specific objectives of the Leonardo da Vinci programme (LEO-SpObj-c): “to enhance the attractiveness of vocational education and training and mobility for employers and individuals and to facilitate the mobility of working trainees”
- Operational Objective of the Leonardo da Vinci programme (LeoOpObj-4): “to improve the transparency and recognition of qualifications and competences, including those acquired through non-formal and informal learning”
- Multi Lateral Projects (Priority-1): “Transparency and recognition of competences and qualifications”
- Priority RQ: “Recognition of qualifications”