

EXPERTISE DEVELOPMENT AT UIC

Learning for the future



INTERNATIONAL UNION
OF RAILWAYS





EXPERTISE DEVELOPMENT STRUCTURES

The Expertise Development Platform

- Rail Training Centre meetings in different training facilities each time – open to all members
- A Steering Committee meeting at least twice a year or more, as required by workload
- Rail Trainer working group
- Customer service working group
- Ad hoc working groups at members' request



OUR PARTNERS

- Regional Networks of Rail Training Centres under the aegis of the Expertise Development Platform

ENRTC

European Network of Rail Training Centres

APNRTC

Asia Pacific Network of Rail Training Centres

MERTCe

UIC Middle-East Railway Training Centre



IRaTCA

International Railway Training Centre for UIC Asia and M.I.I.T (Moscow State University of Railway Engineering)



MENRTC

Middle East Network of Rail Training Centres

- Universities/Academies/Research centres & Rail Uni Net (Railway University Network)



The Expertise Development Division

- Acts as permanent point of contact
- Leads the platform together with the Chair Person
- Coordinates the regional networks of Rail Training Centres (ENRTC, APNRTC/IRaTCA, MENRTC)
- Ensures information and news about international developments are shared within UIC and among UIC members
- Designs and co-ordinates training sessions
- Manages the TALENT project and its corollary actions
- Organises training & networking events, study visits
- Issues benchmarking reports and best practice guides
- Facilitates exchange of knowledge

COOPERATION PROJECTS



PROJECT FUNDED BY THE ENRTC

Trainer Development: what does a good railway trainer look like?

In 2009, the European Centre for the Development of Vocational Training (Cedefop) sponsored the "Defining VET professions" study that reviewed the method for training professional Vocational Educational Trainers and a comparison between these methods and their work realities. The study produced the "Competence Framework for VET Professions, Handbook for practitioners", which included a vision for the future of vocational education and training. The Cedefop study was presented at the First World Congress on Railway Training (WCRT) in Madrid in 2011, stimulating the current EDP project in the rail sector specifically, which is being co-ordinated by the UIC Expertise Development Platform (EDP). A first benchmarking report was undertaken (focussing on Train Driver Trainers -classroom and practical route / road handling-, Signalling engineering trainers and control / despatch trainers summarising some of the current issues within the rail training sector and making the comparative links back to the original Cedefop study.

The UIC benchmarking study recommendations tackled three distinct themes:

- The diversity of a common competence profile for the trainer role,
- The diversity of trainer development post-appointment,
- The common issues facing railway training organisations, where shared experience and approaches may be of value.

Specific recommendations were made to develop a UIC EDP template competence profile for each of Trainer and Developer.

To identify 'good practice' an international exchange programme for trainers (Signalling engineering trainers and control / despatch trainers) was started. The project currently benefits from a grant from the EU programme for education, training, youth and sport: Erasmus+ . 5 Countries are partner in this project: Germany, United Kingdom, Belgium, Norway and The Netherlands.

The programme includes visits to training operations in other countries and the trainers work on four main objectives, under the UIC EDP vision to 'Unite, Inspire and Connect':

- Knowledge sharing on training methodologies, trainer development and new training technologies,
- Developing a European behavioural competence framework for trainers,
- Developing ERTMS training for signalling engineering trainers , train the trainer program with an emphasize on the process of training design
- Collaboration between international VET institutions.

The business case is highly compelling: as a result of the exchange programme, it was demonstrated that the collaborative working provided real financial benefits, with substantial savings. One of the partners realised a saving of 50 % of the costs for hiring the equipment for training.

The continuation and development of the Trainer Development group is integral to the purpose of the EDP, where the sharing of best practice in training is the cornerstone of the Mission. The EDP/UIC will organise in Autumn 2017 a dissemination session in which the intellectual outputs of the project will be showed.



GRTMS, why and how? That's the question

ERTMS is still a hot topic. Or should we say GRTMS (Global Rail Traffic Management System), since there are more lines equipped with ETCS outside Europe than inside Europe.

The phase of implementation differs from already 10 years in use, busy implementing the system or on the verge of doing so. And some are already thinking about 'next generation GRTMS'; new utilizations of GRTMS for ATO (Automatic Train Operation) and ATS (Automatic Train Supervision).

The EDP ERTMS workgroup is working on an UIC ERTMS course to address many questions concerning ERTMS. Such as: Should we implement ERTMS in the first place? 'Brown field migration' with a minimum inconvenience for our clients, the passenger and the shipper, other techniques for wireless data transmission (LTE, GPRS) and don't forget 'migration of the mind'; how to support all the people involved during the process of implementation.

We are thinking of a course more focusing on the 'why' and 'how' instead of the 'what'. But are we on the right path?

During the past months we have realized the framework for the course. Before we start building around the framework by adding content, we would like to check if our ideas match the client's needs. This is where you come in.

We would like to discuss the structure of the course, the content and the way we will offer the course. E-learning, blended learning, in company custom made learning to name a few.

Your contribution will help us to further develop the course you and your employees might attend in the future.

The use of simulation in developing train drivers.

There is a growing amount of simulation users in the railway industry worldwide. The railway industry can benefit on a broader scale if more of these experiences and knowledge about the practical use of simulation is documented and disseminated in a more structured way. The railway industry invests significant sums of money on simulation, but needs to demonstrate value-for-money and also consider whether more collaborative and strategic applications would bring bigger benefit.

The UIC project "the use of simulation in developing train drivers" aims at discovering best practice and make them accessible and building a community of users in the industry. Therefore the project group has collected data from railway simulator users about the following topics:

- What type of simulation is used?
- What sort of learning objectives are used in the simulation scenario's?
- What are simulations used for?
- How are simulations used (environmental variables and methodology)
- Where are simulations used in learning programmes
- What are the skills of a simulation trainer/instructor

The project group already defined an descriptive overview of 18 different areas of simulator use, 5 categories of simulation type and 6 sorts of learning arrangements when using simulation.





PROJECT FUNDED BY APRA (ASIA PACIFIC REGIONAL ASSEMBLY)

RAILPROF (Reference guide of core rail job profiles and professional competences)

With the enhancement of international corridors in Asia, increased volume of trans-border freight and passenger traffic, grown cooperation, the question of homologation of requirements concerning general profile of job positions of different categories of staff of railways has not yet been solved.

It makes unknown the competences of interlocutors in international rail technical contacts and transactions, prevents from using personnel of other railways in trans-border traffic, and particularly complicates joint bilateral or multilateral training programs.

We can see now an absence of detailed descriptions even at a national level (or there are only limited ones), different approaches to skills and competences description, different education systems as well as different recruitment requirements for education and skills in different countries.

In some other industries this problem is being solved. E.g. EU project of tuning of core competences in higher education has been realized since 2000, European qualification framework is aimed to relate different

countries' national qualifications systems to a common European reference framework (8 levels with different requirements for education, but not all the professions listed and not all the countries have set up national QF), there are official job descriptions at national level. In railways in Europe a common description of driver qualification and training is set, there are joint master programs (Austria + SUI + GER; RUS + POL + LET + UKR + FRANCE +...), national qualification description systems (especially for safety related jobs) exist in many countries.

RAILPROF will help developing more actively international educational programs of the UIC, setting up requirements for international employees and training them, enhancing trans-border transportation, as well as sharing international expertise in training in the spheres which are not nationally specific.

The general outcome will be a list of key rail professions with their generic description, list of training.



GLOBAL NETWORK OF RAILWAY TALENTS (TALENT PROJECT)

Railway Talents is a UIC project set up in order to help UIC members, and more largely the railway and transport community, to address the challenges posed by the talent crisis. Today, the industry is facing the following major problems:

- Around the world, populations are ageing: developed countries will face a smaller percentage of active working population and in developing countries economic growth is already outpacing talent development, leading to serious skills shortage.
- Transportation and logistics companies, including rail, will have a harder time employing workers with the needed skills, in the right place, at the right time.
- Transportation and logistics is a growing market which needs more people in a higher complex world.

In order to tackle these different challenges, the UIC has set-up a "Global Network of Railway Talents". This project which addresses different stakeholders (SIAFI Alumni, experienced workers and new recruits in railway-related organisations and research, academia, etc.) is united around six core principles and values: innovation, attractiveness, creativity, performance, responsibility and openness.

2015-2016 Flagship actions:

- Owning a dedicated online platform to spread news about the railway sector, and managing professional groups on social media to encourage networking
- Managing a network of universities (RailUni Net) with an expertise in railway education and/or research
- Developing a management development programme and organising training sessions
- Entrusting volunteer people from the railway sector to be the Ambassadors of the Railway Talents project

www.railtalent.org



*One project, one challenge:
"Create a better future for railways"*

Learning TALENT

According to a report published by the European Transport Research Alliance in 2014, "The multidisciplinary nature of the Transport industry requires competencies from multiple bodies of knowledge, matching with the multidisciplinary character of mobility systems."

After having identified a number of specific challenges, the report makes a series of recommendations, one of them calling for the creation of:

- "New courses and programs (more flexible and not focusing on fundamental disciplines only).
- Specialization courses offering higher flexibility, tailored contents, operational and practical subjects; and through offering well designed and coordinated at European level.
- Lifelong Learning and Vocational Training courses."

RAILWAY TALENTS is an initiative that will redefine the sense of what's possible for talent development and virtual working in the global rail industry. It will prepare a new generation of railway talents working on domestic and international challenges. Several initiatives are taken in this direction, such as the yearly Talent networking and collaborative event, the Ambassadors' work programme- including the current work to develop a (virtual) international mentorship within the Talent network to foster success in rail careers-, along with the design of on-line training courses.

How to provide these new courses and programs in a sector which is in constant evolution? How can we make these learning opportunities accessible to all, whether full time students or busy professionals? To address those challenges, the TALENT project is currently exploring the potential of online learning (eLearning) as a means to attract and develop talents in the rail sector. The TALENT team is currently designing a learning environment with the goal to providing learning opportunities that are:



Project's next steps:

- Uploading and managing a website gathering CVs and job opportunities in the railway sector
- Keeping on developing a training programme based on the network requests
- Enhancing the attraction of talents into the rail industry by developing the Ambassadors' programme



PROJECT FUNDED BY THE EUROPEAN UNION

SKILLFUL

Skills and competences development of future transportation professionals at all levels

The transportation sector employs over 10 million persons in the EU today, accounting for 4.5% of total employment, and representing 4.6% of GDP. At the same time, transport, as a rapidly developing and changing sector, is facing problems to develop, attract and retain appropriate staff. This is partly due to the increase in automation and electrification which means the sector will depend more and more on specialized equipment and products. The implication is that future transport related jobs will require new and advanced skills in engineering as well as in back office operations, but at the same time, the growing interdisciplinary elements of transport activities will also require transport professionals with developed skills in areas such as safety, logistics, IT, behavioral sciences, marketing and economics. As a consequence a new paradigm needs to be developed in training and education cross-fertilizing the disciplines and combining traditional training methods (e.g. face-to-face classrooms etc.) with alternative methods and learning systems (e.g. web-based training etc.) addressing the different needs of the various skill levels (from low skilled workers to high skilled managers/researchers) and incorporating lifelong learning aspects for the professionals in all transports areas.

The SKILLFUL project will tackle the issues raised above by identifying the skills and competences needed by the transport workforce of the future (2020, 2030 and 2050 respectively) and defining the training methods and tools to meet them.

The project's aims

The project's aims are:

- To critically review the existing, emerging and future knowledge and skills requirements of workers at all levels in the transportation sector, with emphasis on competences required by important game changers and paradigm shifters (such as electrification and greening of transport, automation, MaaS, etc.);
- To structure the key specifications and components of the curricula and training courses that will be needed to meet these competence requirements optimally, with emphasis on multidisciplinary education and training programmes;
- To identify and propose new business roles in the education and training chain in order to achieve European wide competence development and take-up in a sustainable way. The skillful project started in October 2016 for a 3 year period.

<http://skillfulproject.eu/>





World Congresses on Railway Training

Since the success of the first UIC World Congress on Rail Training the UIC Expertise Development Platform decided to organise large forums of this kind every two years. Since then, two other Congresses were organised in Vienna and Lisbon, and the fourth one will take place in April 2017 in Berlin/Potsdam.

The key congress aims are:

- Promoting excellence in railway training through best practice models
- Highlighting research findings in this area which bring innovation and have practical application to the industry
- Identifying new challenges for training and training technologies
- Providing a unique opportunity to share knowledge and experience amongst training professionals and managers
- The Congress is targeted at human resources and training directors, training executives, and training and workforce development experts.





TRAINING AND NETWORKING EVENTS

in 2017

4TH UIC WORLD CONGRESS ON RAIL TRAINING

Date: 5 – 7 April 2017

Location: Berlin / Potsdam, Germany

Host: DB Akademie

Website: www.wcrt2017.org

13TH TRAINING ON HIGH SPEED SYSTEMS LEVEL 1

Date: 24 – 29 April 2017

Location: Paris, France

Host: UIC

Website: www.uic.org

TRAINING SESSION 2017 ON INTEGRATED TRANSPORT AND LOGISTICS PLANNING AND OPERATIONS (IRATCA)

Date: 24 – 28 April 2017

Location: Seoul, South Korea

Host: IRATCA

TRAINING SESSION 2017 ON BEST HR & TRAINING PRACTICES FOR RAILWAYS, M.I.I.T, MOSCOW

Date: 11 – 13 October 2017

Location: Moscow, Russia

Host: M.I.I.T.

EXPERTISE DEVELOPMENT PLATFORM

Date: 26 – 27 October 2017

Location: Italy

Host: FS

RAIL ASSET MANAGEMENT COURSE, ON-LINE TRAINING COURSE

Date: Mid-September 2017

Website: www.railtalent.org/elearning

3RD NETWORKING & COLLABORATIVE TALENT EVENT, 11TH INTERNATIONAL FORUM AND EXHIBITION TRANSPORT OF RUSSIA ,2017 TRANSPORT WEEK

Date: 7 – 8 December 2017

Location: Moscow, Russia

Host: M.I.I.T.



One of the dimensions of the sustainable strategy is the social dimension. The Social Pillar, including training and education issues, is one of the three key pillars of sustainable development, along with environmental and economic issues. Training, education and workforce development have a key role to play to accompany and anticipate the transformations that are happening in many industries, including the rail sector.

Demands on railway organisations are changing: liberalisation, internationalisation/global market and supply chain, technical harmonisation and new technologies, as well as increasing service expectations, new social frameworks, demographic challenges and the loss of corporate knowledge.

It is of utmost importance for railway employers to attract and retain the best talents available in the job market.

Railway need talents able to operate on the global stage and to collaborate across functions as well as cultures. An important aim of our activity is to facilitate the process of knowledge, values and experience sharing between different cultures and generations of railway people.

EXPERTISE DEVELOPMENT AT UIC

Author: Nathalie Amirault, Head of Expertise Development Unit

English editor: Helen Slaney, UIC Communications Dept.

Design: Marina Grzanka

Publisher: ACINNOV

This brochure is a publication of the INTERNATIONAL UNION OF RAILWAYS (UIC)

16 rue Jean Rey, F - 75015 PARIS

Nathalie Amirault, amirault@uic.org

Tel. : +33 (0) 1 44 49 21 47

Fax : +33 (0) 1 44 49 21 49

www.uic.org

www.railtraining.org

UIC Expertise Development Platform

Chair: Esther Marconi (FS)

UIC Expertise Development Division

Nathalie Amirault (UIC)

Photographic contributions:

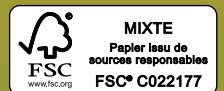
Special thanks to railway companies

March 2017

Warning

No part of this publication may be copied, reproduced or distributed by any means whatsoever, including electronic, except for private and individual use, without the express permission of the International Union of Railways (UIC). The same applies for translation, adaptation or transformation, arrangement or reproduction by any method or procedure whatsoever. The sole exceptions - noting the author's name and the source - are "analyses and brief quotations justified by the critical, argumentative, educational, scientific or informative nature of the publication into which they are incorporated" (Articles L 122-4 and L122-5 of the French Intellectual Property Code).

© International Union of Railways (UIC) - Paris, March 2017



*Eco-friendly printing
sourced from sustainable forests*



INTERNATIONAL UNION
OF RAILWAYS