

Staffer: seeking a new skills strategy for Europe's railway sector

Staffer is a cross-industry project involving 32 organisations that are working to improve and enhance training programmes to meet the European railway industry's future needs. With 12 months remaining of the four-year programme, **Kevin Smith** looks at progress so far.

THE railway industry's skills challenge is rightfully a regularly discussed issue. The looming retirement of a significant cohort of employees is a major concern - around a third are set to leave the industry in the next 10 years. At the same time, the railway sector is struggling to secure the skills necessary to deliver a technological transformation of the industry, placing its future prosperity in doubt.

This stark situation confronting the global leadership of the European rail supply industry was laid bare in a European Commission (EC) study published in 2019. The study stated that the supply of technically-qualified engineers may become a bottleneck in maintaining the competitive position of the EU railway supply industry and that "promotion of the development of skills and safeguarding access to skilled labour" is one of the main areas of concern for Europe's railway suppliers.

In light of the study, and the need to immediately address these weaknesses, the EC shortlisted the rail industry as one of six sectors eligible for the creation of an Erasmus+ Blueprint for Sectoral Cooperation on Skills. This blueprint aims to support an overall sectoral skills strategy and develop concrete actions to address short and medium-term skills needs in specific industries. EU funding was made available for the project. And after several months of discussions, 32 partners came forward to back the proposal for a European project in February 2020.

The EC confirmed approval of the project, the Skill Training Alliance for the Future European Rail System (Staffer), in summer 2020, with the alliance commencing work on November 1 2020.

Staffer is coordinated by the University of Genoa, and involves stakeholders from 13 countries working across the railway sector, including eight suppliers, six national railway operators and infrastructure managers, 14 universities and educational institutions, two industry associations and one consultancy (see panel).

Split into three phases, Staffer's objective is firstly to identify the main skills gaps and assess future needs within the industry. This work also considered the shortcomings of vocational and educational institutions and technical universities in meeting the industry's requirements for its future recruitment. Work is currently underway under the second phase to propose the necessary adaptations to curricula, training and educational programmes offered by these institutions to meet these technological demands. In its final phase the project will support the development of an overall industry skills strategy, which would include concrete actions to address short and medium-term skills needs.

Unify the sector

Professor Angela Di Febraro, Staffer's project coordinator and a professor of transportation engineering at the University of Genoa, explains that the primary objective of the first stage of the programme was to unify the sector and its understanding of the skills, and therefore the training needs, required to serve the job profiles within the current and future railway.

Identifying these profiles was a requirement

of the EC and necessary for the effective division of the project into three work packages in its first phase. Di Febraro describes the process of identifying just six job profiles, three of which are applicable to the railway supply sector and three to railway operators and infrastructure managers, as the most challenging task that the project has faced. She reports that up to 60 possible profiles were identified for infrastructure management alone, reflecting the variety of professional roles.

"Our way of working from the beginning has been based on maximising opportunities for sharing between the partners and the different work packages, and ultimately the work package leaders," Di Febraro says. "We held regular meetings with the work package leaders so their voice could be heard and message understood. We found that this way of communicating and structuring the activities worked well so we have maintained it."

The final six profiles consider a range of European Qualifications Framework (EQF) classifications, emphasising the level of training associated with the varying roles that fall within each profile. Di Febraro says the specific categorisation also reflects the growing



understanding that the railway is a system of systems, an approach emphasised in the System Pillar of Europe's Rail joint research undertaking.

The profiles are:

Rail operations and infrastructure management

- train drivers - EQF 3-4
- rail traffic/operations technicians - EQF 3-4, and post master's degree and mid-career training EQF 7, and
- railway systems technicians - EQF 5-6.

Railway industry suppliers

- railway systems engineering - EQF 7-8
- rail traffic/operations engineering - EQF 5-6 and EQF 7, and
- rail transport engineering - EQF 7 and EQF 8.

Lacking

With the profiles established, work shifted to identifying the specific skills that are lacking and the future training programme requirements for each of the profiles. Dr Alice Consilvio, a transportation engineering researcher at the University of Genoa, who is working alongside Professor Di Febraro on the Staffer project, says this work started by identifying the trends that are impacting the sector and the skills necessary to deliver these outcomes. In total, 14 skillsets were identified:

- big data & Artificial Intelligence
- cybersecurity & Internet of Things (IoT)
- alternative energy and technologies
- formal methods for system design and verification
- foreign languages
- networking and ICT technologies
- norms, standards & certification
- reliability, maintenance and life cycle management
- safety, dependability, security
- smart cities and smart station design
- transport systems
- transversal skills, including learning, communication and soft skills
- virtual reality, and
- web development.

Consilvio says that from these macro skillsets Staffer has worked to identify sets of soft skills that were allocated to the different EPF levels within the six occupational profiles, resulting in the outline of content for future training programmes.

Work is continuing to refine these new and update existing training programmes to incorporate applicable Science, Technology, Engineering and Mathematics (Stem) and green, digital and job-specific skills relating to the manufacture of rail products and services as well as supporting rail operation, maintenance

Project partners

Railways and infrastructure managers

Austrian Federal Railways (ÖBB)
 French National Railways (SNCF)
 German Rail (DB)
 Italian State Railways (FS)
 Luxembourg Railways (CFL)
 ProRail, Netherlands

Suppliers

Alstom
 CAF
 Hitachi
 Siemens

Educational, training and vocational institutions

HTL Mödling, Austria
 University of Belgrade, Serbia
 Aristotle University of Thessaloniki, Greece
 CESI, France

University of Rome, Italy
 National Conservatory of Arts and Crafts, France
 St Pölten University of Applied Sciences, Austria
 Czech Technical University, Prague
 Estaca Engineering School, France
 Technical University Dresden, Germany
 Erfurt University of Applied Sciences, Germany
 For.Fer, Italy
 HTL Rennweg, Austria
 University of Genoa, Italy
 Warsaw School of Economics, Poland

Associations

Mafex, Spain
 European Rail Industry Association (Unife)
 The Community of European Railways and Infrastructure Companies (CER)
 French Railway Industry Association (FIF)

Consultancy

WMP Consult

and infrastructure management tasks. In addition, there is consideration of ICT skills relating to the use of digital technologies in the manufacture of rail products and to support digitalisation in rail transport through deployment of the Internet of Things (IoT), data analytics and cybersecurity strategies.

Another key element of this work is to making these prospective rail training programmes more attractive and accessible to young people, thus ending the common preconception of rail as an old and unfashionable industry that is not very welcoming to certain groups, including women. "The macro trends of digitalisation and automation are presenting the idea that sectors once seen as hard are becoming softer because of the growing prevalence of soft skills," Di Febraro says.

"Reorganising the profiles and coming to such a short list also has the objective of trying to concentrate the attention of younger people on the new skills and the new professional profiles that the sector can offer. The growing introduction of software-based technologies is introducing very significant differences in the way of working."

Another advantage that Staffer is delivering, according to Di Febraro, is to consolidate the varying approaches to training followed in different European countries. The objective of this shared approach is to deliver broadly the same professional outcome no matter where the training is delivered. This includes an emphasis on delivering the same material in all courses that are offered in English rather than the native language.

A further added benefit of the cross-industry approach is that smaller

institutions are leveraging the scale and expertise of larger organisations where training infrastructure is already well advanced - the French National Railways (SNCF) academy, for example, has proven a useful resource, Di Febraro says. There is similarly the opportunity to share teaching resources between universities and educational institutions - Di Febraro says prominent academics are visiting Genoa to teach her students this month and she expects the programme to facilitate more examples of cross-collaboration in the future.

Becoming a more attractive sector for young people is set to be a central component of the wider skills strategy that Staffer will deliver at the end of the project in 12 months' time. Di Febraro says work is underway on the first draft of this strategy and that her hope is that it serves to unify the sector in its future expectations for training.

"What we expect for the final year is to define the first collaboration in implementing the training and the mobility programmes thus achieving the objectives we set for the final phase of the project," Di Febraro says.

She adds that a satisfying outcome for the project would be for the skills strategy it has developed to be widely adopted and implemented. Key to this success is the continuing collaboration of the project partners. The early signs are that this is in place and she is hopeful that the momentum will continue in the final months of the project. If it does, Staffer may ultimately prove a turning point in the sector's quest to secure the railway industry employees of tomorrow, and with it, future success. **IRJ**