



# STAFFER

EUROPEAN RAIL SKILLS ALLIANCE

## STAFFER DELIVERABLE 7.4

# Designing and implementing the action plan of the sectoral skills strategy

3<sup>rd</sup> AND PREFINAL VERSION

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SAPIENZA  
UNIVERSITÀ DI ROMA

  
wmp consult



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# 1 INTRODUCTION

This deliverable is suggesting a long-term action plan and roadmap implementing the sectoral skills strategy for the rail sector. It has been elaborated and agreed upon by all STAFFER partners in the context of Work Package 7 during the final year of the STAFFER Rail Blueprint project. It is building on the results and outcomes of three other tasks carried out in Work Package 7<sup>1</sup>, of which (Tasks 7.1, 7.2 and 7.3) as well as results and outcomes of the remaining eight collaborative work packages achievements and related 30 tasks that were implemented between November 2020 and October 2024 (see Table 1 below).

**TABLE 1: STAFFER APPLICATION: OVERVIEW OF WORK PACKAGES AND TASKS**

Phase	WP / task	WP / task leaders	
1 Skills Identification	<b>1</b>	<b>Identification of current and future skills and competence needs</b>	<b>Siemens / TUD</b>
	1.1	Analysis of the state of art	SIEMENS
	1.2	Future vision of the rail sector as a whole	TUD
	<b>2</b>	<b>Identification of current and future skills and competence needs – rail operational point of view</b>	<b>wmp / DB</b>
	2.1	Future vision of the rail sector from the rail operators and infrastructure managers point of view	wmp
	2.2	Identification of skills needs and occupational profiles from the rail operators and infrastructure managers point of view	DB
	<b>3</b>	<b>Identification of current and future skills and competence needs from the supplier point of view</b>	<b>MAFEX / SIEMENS</b>
	3.1	Future vision of the rail sector from the point of view of suppliers	MAFEX
		Identification of skill needs and occupational profiles from the rail point of view of suppliers	SIEMENS
2 Mobility and training programme design and implementation	<b>4</b>	<b>Development of mobility and training programmes</b>	<b>UNIGE / CESI</b>
	4.1	Map of the existing educational providers and programmes	ESTACA
	4.2	Identification of Qualification Standards	CESI
	4.3	Benchmarking the existing programmes and catalogue of the best practices	MAFEX
	4.4	Development of mobility and training programmes in the field of cross-border railways communication and language	DB
	4.5	Development of mobility and training paths, programmes and courses	UNIGE
	<b>5</b>	<b>Validation of mobility and training and education programmes for effectively increasing employability and career opportunities</b>	<b>BT / UASFHE</b>
	5.1	Identification of criteria and measurable indicators to evaluate employability and career opportunities	UB
	5.2	Assessment of employability and career opportunities from the point of view of rail operators and infrastructure managers	DB
	5.3	Assessment of employability and career opportunities from the point of view of suppliers	BT
5.4	Validation and continuous evaluation of enhanced mobility and career opportunities	UASFHE	

<sup>1</sup> Task 7.1 „Developing an integrated skills strategy for the rail sector“ (published), Task 7.2 „Making the rail sector a great place to work“ – promoting attractiveness of the rail sector as a great place to work (published) and Task 7.3 „Action plan for obtaining political and financial support for STAFFER educational programmes“ (unpublished).

	<b>6</b>	<b>Implementation of training and mobility programmes</b>	<b>UNIROMA / CNAM</b>
	6.1.	Continuous programmes and monitoring methodology	MAFEX
	6.2	Implementation of cross-European student mobility programmes and work-based internships	UASSP
	6.3.	Implementation of cross-European apprenticeship mobility programmes and ...	wmp
	6.4	Implementation of cross-European staff mobility programmes and ...	DB
	6.5	Implementation of VET at EQF levels 3-5	CNAM
	6.6	Implementation of VET at EQF 6-8	UNIROMA1
	6.7	Implementation of mobility and training programmes in the field of cross-border railways, communication and language	DB
<b>Development of the rail sector strategy</b>	<b>7</b>	<b>Development of a long-term Strategy and Action Plan</b>	<b>wmp / UASSP</b>
	7.1	Developing an integrated sectoral skills strategy for the rail sector <i>7.1.1 Design a more specific strategy for rail operators and infrastructure managers</i> <i>7.1.2 Design a more specific strategy for rail suppliers</i>	wmp
	7.2	“Making the rail sector a great place to work” – promoting attractiveness	TUD
	7.3	Develop action plan for obtaining political and financial support ....	UASSP
	7.4	Designing and implementing the action plan of the sectoral skills strategy	UNIROMA1 / wmp
<b>Continuous tasks</b>	<b>8</b>	<b>Policy recommendations and dissemination</b>	<b>CER / UNIFE</b>
	8.1	Development of the Communication, Dissemination and Exploitation Plan	CER + UNIFE
	8.2	Project communication and dissemination activities	CER + UNIFE
	8.3	Policy recommendations and exploitation activities	CER + UNIFE
	<b>9</b>	<b>Project management and quality assurance</b>	<b>UNIGE</b>
	9.1 - 9.7	Various tasks, all managed by UNIGE in cooperation with CER and UNIFE and input from all partners (administration, finance, technical/strategic management, project meeting coordination, risk management, cooperation with other blueprints)	UNIGE

The main objective of this deliverable is to present the action plan and roadmap for the progressive roll-out of specific actions and measures that have been identified as crucial to implementing the long-term rail sector skills strategy in a way that is sustainable and matches the challenges the sector is facing.

This deliverable is structured as follows:

- Chapter 2 answers the question why a long-term action plan on skills is needed for the rail sector.
- Chapter 3 summarises key strategic objects and key pillars of the rail sector skills strategy.
- Chapter 4 describes key fields of action that are regarded as crucial for achieving the objectives of the long-term strategy for the rail sector.
- Chapter 5 presents specific activities that are regarded important to implement the long-term rail skills strategy at the European, national and regional/local levels.
- Chapter 6 presents requirements and needs as regards governance, European and national coordination as well as in relation to financial resources needed to guarantee sustainability of results.



- Chapter 7 considers different options for implementing the action plan of the sectoral skills strategy, also presenting good practice examples of other sectoral Blueprints and sketches different scenarios for the railway sector.
- The final chapter 8 draws conclusions and recommendations for implementing the action plan for the whole rail sector in a sound, sustainable and flexible manner.



## 2 WHY A LONG-TERM ACTION PLAN ON SKILLS IS NEEDED IN THE RAIL SECTOR

### 2.1 The European rail sector faces powerful challenges

The rail sector is of great and growing importance due to a range of environmental, economic, societal, technological, and other factors. Being by far the most environmentally friendly mode of transport, it makes sense to significantly strengthen and expand the rail sector to fulfil the commitments of the European Green Deal (2020). The Green Deal's sustainable and smart mobility strategy defines ambitious milestones for rail in order to reduce 90% of the transport sector's emissions by 2050 compared to the 1990 levels. With respect to rail passenger transport, the strategy defines the ambition of doubling high-speed rail traffic by 2030 and tripling high-speed rail traffic by 2050. With respect to rail freight transport, the strategy defines the ambition of doubling rail freight traffic by 2050.

Furthermore, by 2050, a fully operational, multimodal Trans-European Transport Network for sustainable and smart transport with high-speed connectivity should be in place.

Much remains to be done to achieve these ambitious milestones. Passenger rail transport is estimated to represent only around 10% of European cross-border passenger transport.<sup>2</sup> On the other hand, rail freight services are already largely cross-border in Europe, but barriers hamper their competitiveness with other modes of transport. Boosting cross-border and long-distance rail transport within the EU is expected to play a vital role for the realisation of these strategic and ambitious milestones, especially given the fact that today the divergence between national railway systems across the EU hinders the use of cross-border rail transport to its full potential.

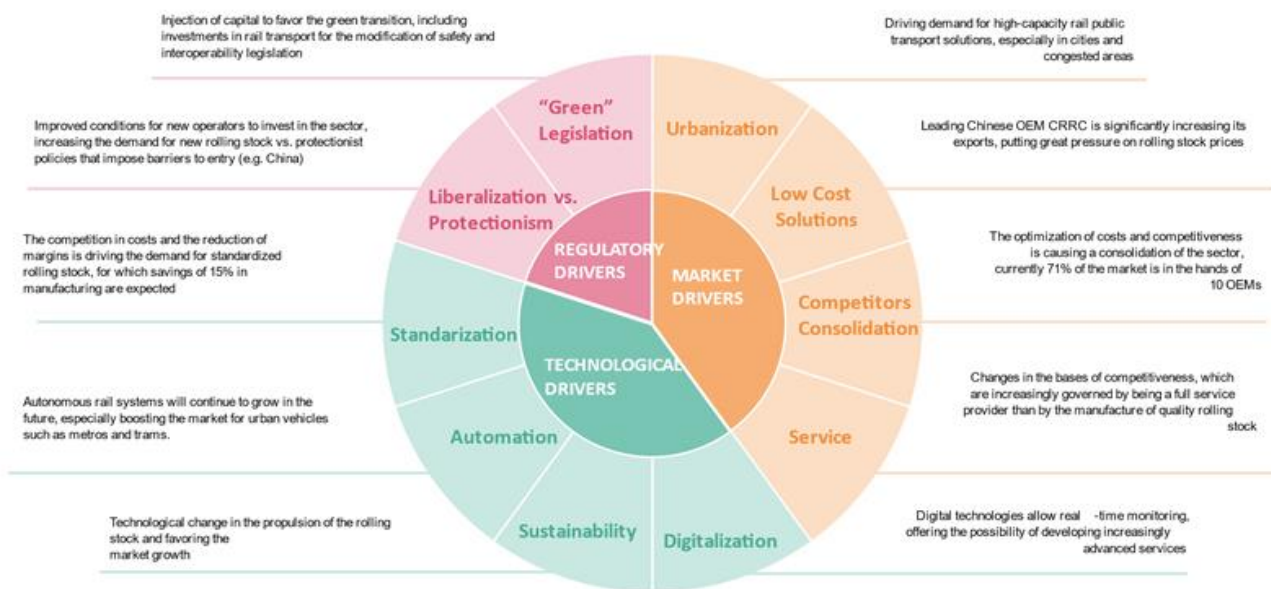
The ambitious goals in the context of the Green Deal targets and cross-border railways are not the only challenges faced by the rail sector. STAFFER Deliverable 3.1 highlights drivers of change on the rail supply industry, shows that rail transport is an enabler with a huge potential to link regions and connect society, and facilitates social and economic development. Rail must be designed and developed to solve our current problems and demands, while delivering the highest levels of dependability, resilience, and quality. The same relates to the liberalisation of

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<sup>2</sup> European Commission, Directorate-General for Mobility and Transport, Long-distance cross-border passenger rail services: final report, Publications Office of the European Union, 2021, <https://data.europa.eu/doi/10.2832/019365>.

the sector and other more particular drivers such as digitalisation and automation and stronger service orientation. In this sense, new communication technologies and IT solutions must be taken into consideration to improve connectivity, real time data, enabling smart prediction, signalling, easier ticketing systems and IoT-based innovations at European scale. Figure 1 illustrates major drivers of change in the rail market that will have a huge impact on the rail supply industry, on railway operation, and infrastructure development.

**FIGURE 1: MAIN DRIVERS OF THE EUROPEAN RAIL MARKET**



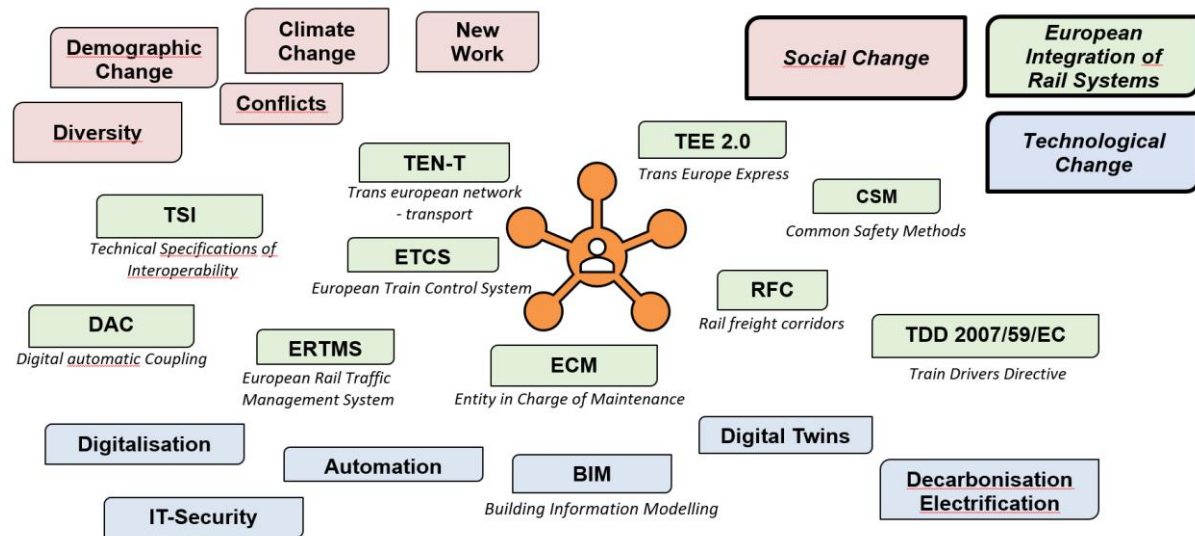
Source: STAFFER Deliverable 3.1

## 2.2 Skills and workforce related challenges and needs in the rail sector

The rail sector and rail specific occupations and activities in the rail supply industry as well as in railway operation/infrastructure management are currently experiencing an enormous change which is driven by new and often disruptive digital technologies, accelerated automation as well as social and demographic challenges. As shown in Figure 2 below, digitalisation and automation technologies are also key enablers for more closely integrating different national rail systems: new rail technologies such the control, signalling and command systems ETCS and ERTMS are already triggering transnational harmonisation of standards and rules, while future technologies such as the Digital Automatic Coupling will only succeed if uniform standards and specifications are implemented on a European-wide scale. In addition to these technological

challenges, the rail sector is also expected to play a key role in mitigating climate change and achieving the goals of the European Green Deal.

**FIGURE 2: SOCIAL AND TECHNOLOGICAL CHANGE AND EUROPEANISATION OF THE RAIL SECTOR**



Source: Lehman, M. et al. 2023

Accelerated changes driven by disruptive technologies and their impact on railway operation and infrastructures, including their maintenance as well as changes in overall mobility patterns driven by the need of decarbonisation and new customer expectations, needs and behaviours will have a huge impact on skills needs and the requirement for rail sector workers to obtain new knowledge, competencies and qualifications. The STAFFER project has analysed these impacts in comprehensive research and surveys, focus and peer group discussions from the perspective of both rail operation and infrastructure management as well as the rail supply industry.<sup>3</sup> These skills intelligence activities<sup>4</sup>, that for the first time included detailed analyses of changing skill needs of about sixty rail-specific occupational profiles, have provided strong evidence that new skills and upskilling in terms of additional fundamental as well as transversal skills are needed across all qualification levels and domains of railways. Furthermore, since technological and other change processes have become more frequent and are happening continuously, there is also a need for continuous measurement of skill intelligence and for the adjustment of occupational profiles, curricula and vocational programmes.

<sup>3</sup> See the STAFFER Deliverables D.2.1 and D.2.2 (for rail operation/infrastructure management) and D.3.1 and D.3.2 (for rail supply industry).

<sup>4</sup> Skill intelligence according to CEDEFOP refers to the process of identifying, collecting, analysing, synthesising and presenting quantitative or qualitative information on skills and labour market to identify key trends and demands in the labour market; assess, anticipate and forecast skill needs; and address skill gaps and mismatches and – amongst others – to adapt provision of education and training accordingly.

In addition to the rail sector's changing skills needs STAFFER confirmed overall shortage of skilled workers and the "race for talent". More specifically, when it comes to technical and engineering occupations, job applicants are a rare commodity and the recruitment market in many occupations has become a market where the number of vacancies is higher than the number of applicants.

The need for additional workers was addressed in STAFFER task 7.2. The task's deliverable presents a comprehensive analysis of the rail sector's challenges in attracting workers, documents examples of innovative and good practices, and presents recommendations for attracting more workers.

According to Deliverable 7.2, while many sectors are facing similar challenges, the situation in the rail sector is different and for several reasons more urgent:

- The sector – also compared to other transport sectors such as aviation or automotive – still has an image problem and lacks attractiveness. This not only relates to traditional railway jobs such as train drivers, traffic controllers, rail dispatchers but also technical and engineering occupations where rail is directly competing with other sectors in manufacturing and other branches (e.g. building, infrastructure development).
- Railway academic and research programmes are less visible than similar programmes in other sectors because of underfunding and lack of systematic industry support. This reduces the attractiveness of railway careers for young talents and experienced workers, especially those from underrepresented groups. When it comes to the recruitment of young talents and the decision of young learners to choose between different pathways, e.g. in engineering or IT, the rail sector often is not considered seriously because compared to other sectors, the rail sector still is under the radar when it comes to sector specific higher research and education institutions – railway specific faculties are rare and railway engineering departments often lack attractiveness due to underfunding and lack of industry support.
- And finally, and in contrast to highly globalised sectors in manufacturing (e.g. automotive) or transport (aviation, maritime), rail sector education and training still is shaped very much by a dualism of technologies, operations and job-specific tasks that are the same across countries but at the same time governed by a multitude of national rules, standards and specifications which hampers professional mobility and exchange across borders as well as the development of international educational programmes.

Therefore, when it comes to rail sector skills and workforce development, there is a strong need to go beyond upskilling and reskilling of the current work force and to focus on increasing the attractiveness of railways as a career path and as an attractive option to learn and study.

The focus should be on job profiles that from the perspective of rail suppliers and railway operators and infrastructure managers will be needed in the future and where already today the labour market is very tight and where there will be an increased demand in the future. These include engineering, IT and technical profiles but also train drivers and staff with interoperability skills needs in traffic control, command and signalling.

Furthermore, there is a strong need to attract more women into rail-related occupations and to foster a generally more diversified workforce as the share of female workers in the rail sector is very low (approximately 20 % in railway operation and infrastructure).

Finally, given the fact that the existing labour shortage in many European countries is already having a negative effect on the reliability and quality of railway operation, there is also the need to engage more in making the rail sector more attractive for domain and career changers and consider additional ways of recruitment, for example international recruitment, including recruitment of third country nationals for the sector. In addition, there is also the need to focus more on the attractiveness, visibility and capacities of railway VET and higher education institutions and related programmes.

## **2.3 Developing a vocational education and training system that meets the challenges**

A key element of STAFFER consisted of developing training and educational programmes designed to meet the skills needs identified earlier (WPs 1, 2, and 3) considering the general trends of the railway sector and the specific elaboration provided by train operators, infrastructure managers, and rail suppliers. In WP 4 a detailed analysis was made to benchmark existing programmes and qualification systems and then to use this information to develop new programmes (e.g., courses, mobility programmes) designed to meet the sector's future skills needs.

In the context of Task 4.5, STAFFER partners designed new training contents and mobility programmes that reflect the skill and competence needs resulting from the skills analyses conducting in previous work packages and tasks, which considered the general trends of the railway sector, and the specific elaboration provided by train operators, infrastructure managers, and rail suppliers. The basis of new education, training and mobility programmes was the identification of topics and thematic fields that according to the results of previous WP1, WP2, WP3 are new or important fields impacting on the railway sector (see Table 2 below).

**TABLE 2: SELECTED FIELDS/TRENDS/SKILLSETS REGARDED AS HIGHLY RELEVANT FOR RAILWAY EDUCATION AND TRAINING PROGRAMMES**

Fields / Trends / Skillsets
<ol style="list-style-type: none"> <li>1. <b>Big Data &amp; Artificial Intelligence (AI)</b></li> <li>2. <b>Cybersecurity &amp; Internet of Things (IoT)</b></li> <li>3. <b>Global new energies &amp; technologies</b></li> <li>4. <b>Formal methods for system design &amp; verification</b></li> <li>5. <b>Living language</b></li> <li>6. <b>Networking and ICT technologies</b></li> <li>7. <b>Norms, standards and certification</b></li> <li>8. <b>Reliability, maintenance and life cycle management</b></li> <li>9. <b>Safety, dependability, security</b></li> <li>10. <b>Smart cities and smart station design</b></li> <li>11. <b>Transportation systems</b></li> <li>12. <b>Transversal skills in railways</b> <ol style="list-style-type: none"> <li>a. <b>Learning skills</b></li> <li>b. <b>Communication</b></li> <li>c. <b>Soft skills</b></li> </ol> </li> <li>13. <b>Virtual reality</b></li> <li>14. <b>Web development</b></li> </ol>

Source: STAFFER WP 4, Deliverable 4.5

In addition to the identification of new skills and knowledge requirements, six groups of highly relevant occupational profiles in the fields of the rail supply industry and railway operation and infrastructure management were selected by WP2 and WP3 and analysed and clustered into six groups as shown in Table 3 below.

**TABLE 3: THE IDENTIFIED SIX GROUPS OF RAILWAY OCCUPATIONAL PROFILES**

Profile	Description	Main task	Keywords
<b>Train drivers</b>	Train drivers are responsible for driving the locomotive respecting all relevant safety, operational and communication regulations, and have full responsibility for the safety of passengers and cargo.	Operate trains providing passenger or cargo transport services	Driving the locomotive; Checking safety aspects; Communicating and cooperating with TOCs, IMs and on-board staff
<b>Rail traffic controllers</b>	Rail traffic/operations technicians are responsible for controlling the movement of trains ensuring safe operations at all times (i.e., in normal, degraded, and emergency conditions).	Operate signals and points that help make sure trains run safely and on time	Controlling traffic and train operations; Checking signalling and safety aspects; Coordinating logistics
<b>Railway systems technicians</b>	Railway systems technicians are responsible for constructing, installing, inspecting, testing, and maintaining railway infrastructure and rolling stock.	Doing work on railway rolling stock and infrastructure	Inspecting and maintaining infrastructure and rolling stock; Building, testing and installing infrastructure and rolling stock
<b>Railway systems engineers</b>	Railway systems engineers are responsible for designing and managing all types of railway infrastructure and rolling stock.	Designing and planning railway	Designing - planning work on the physical systems; Planning maintenance, Dealing with

Profile	Description	Main task	Keywords
		infrastructure and rolling stock	signalling interoperability and digitalisation
<b>Rail traffic/ operations engineers</b>	Rail traffic/operation engineers are responsible for all aspects of railway operations (traffic) planning and management.	Designing and planning train control and operations	Designing timetable; Analysing and simulating rail traffic; Managing rail projects, Dealing with digitalisation
<b>Rail transport engineers</b>	Rail transport engineers are responsible for organising all aspects of the rail transport system (infrastructure, rolling stock, and operations) into an efficient and effective transport system also considering business aspects.	Plan, design and maintain a safe, cost-effective, high-quality, and environmentally responsible approach across the technical projects in railway	Analysing rail performance; Applying a systemic approach; Planning integrated transport services; Managing staff; Evaluating rail attractiveness considering social, economic, and environmental factors; Analysing rail transport demand; Defining rail business strategy; Evaluating the compliance with regulations, standards, and certifications; Promoting innovation and digitalisation transition; Designing customer relations and services

Source: STAFFER WP7, Deliverable 7.3

For each of the six groups of occupational profiles, training programmes were defined at the EQF levels which were considered the most relevant for that profile. The contents of the programmes were identified considering both the fields/trends/skillsets previously identified and the results of Task 4.4, specific in the field of cross-border railways communication and language. The list of the final nine programmes is reported in Table 4 below.

**TABLE 4: DEVELOPED TRAINING PROGRAMMES**

Programme title	EQF Level
<b>Train driver</b>	<b>EQF 3-4</b>
<b>Rail traffic controller / operations technician</b>	<b>EQF 3-4</b> <b>Post-master and mid-career training EQF 7</b>
<b>Railway systems technician</b>	<b>EQF 3-4</b>
<b>Railway systems engineering</b>	<b>EQF 7-8</b>
<b>Railway traffic / operations engineering</b>	<b>EQF 6</b> <b>EQF 7</b>
<b>Rail transport engineering</b>	<b>EQF 7-8 EQF 8</b>

Source: STAFFER Deliverable 4.5

In WP 5 the focus shifted towards developing methods for analysing existing and proposed training and education programmes in terms of how well they help employees learn and maintain the skills needed to effectively do their jobs and grow into a meaningful career (a

concept known as employability). Next, it applies this method to the railway programmes developed in WP 4.

STAFFER WP6 focused on implementing and testing training/education and mobility programmes and designing a method for assessing these programmes. The assessment methodology (D 6.1) presents tools for monitoring training/education and mobility programmes. The methodology emphasises the need for continuous monitoring to ensure that programmes continue to meet the needs of the railway sector and increase staff employability.

The student, apprentices and staff mobility programmes (tasks 6.2, 6.3, 6.4) consist of specific activities designed to improve mobility based on the concepts outlined in WP 5.

The specific training/education programmes (tasks 6.5, 6.6, 6.7) consisted of courses designed to meet future skills needs (i.e., developing specific courses for the specific topics (i.e., course titles) identified in WP4.

Finally, so that the creation of new training programmes and the updating of existing ones based on the needs of the railway sector, carried out within the STAFFER framework, can continue beyond the end of the project, in task 7.3 an educational program development process was defined.

The Educational Programme Action Plan (STAFFER Deliverable 7.3) is a detailed set of activities needed to implement the railway sector educational programme, which is a repeating process for creating specific training, education and mobility programmes needed to meet the needs of all railway sector employers.

The process for developing and re-structuring existing educational programmes to meet railway sector workforce needs consists of three main activities:

- Determining what needs to be taught (demand);
- Developing and re-structuring programmes for teaching needed subjects; and,
- Offering educational programmes to students.

In Deliverable 7.3, a strategy for obtaining political and financial support for implementing these activities is also presented.

## **2.4 Developing mindsets and skills for the European rail area and cross-border railways**

One of STAFFER's key findings was the need for developing mindsets and skills to support the European rail area and cross-border railway operations. Therefore, STAFFER WP 4.4 presents

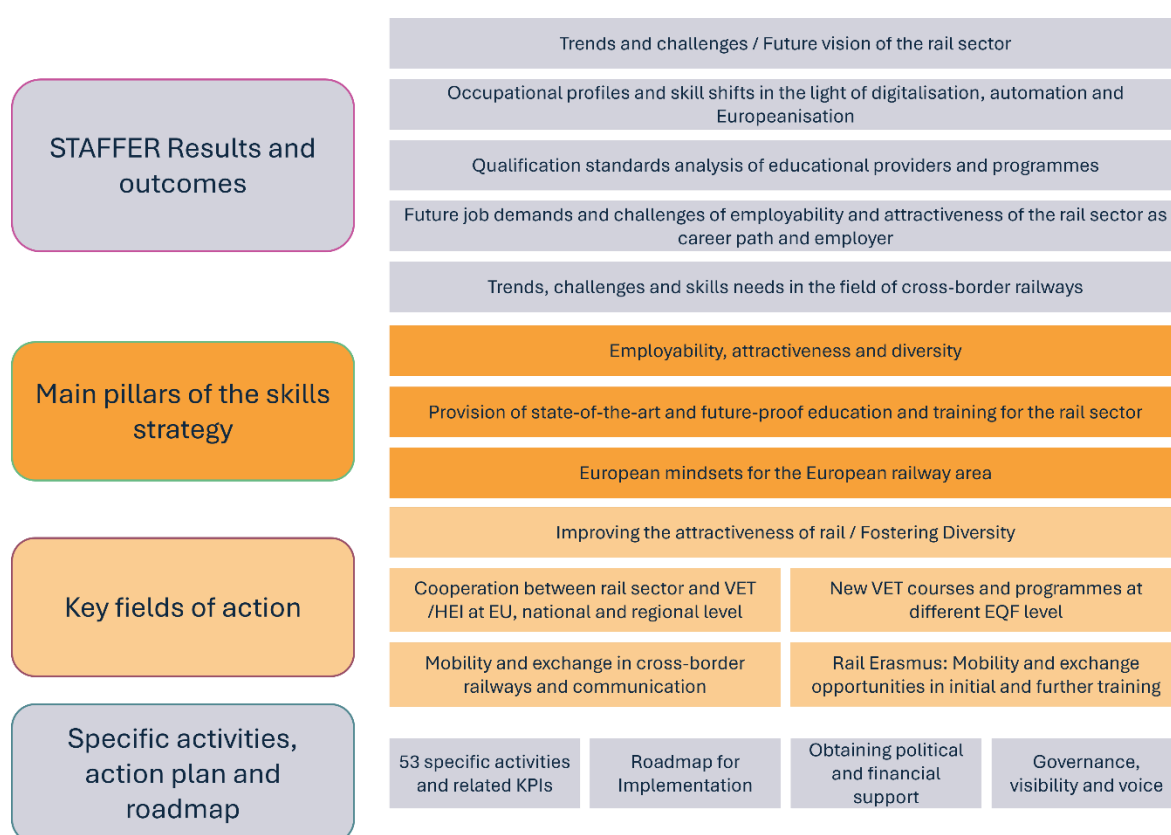


a specific training and educational programme for supporting creation and development of a European mindset for railways for a targeted group of railway staff. The training programme presents a detailed plan for using training programmes, conferences, mobility programmes and academic programmes to support improved communications, adoption of the European mindset, cross border supporting technologies, and international operations for three specific job categories: train drivers, maintenance staff, and dispatchers.

### 3 LONG-TERM SKILLS STRATEGY FOR THE RAIL SECTOR

STAFFER Deliverable 7.1 presents an integrated long-term skills strategy for the rail sector which was developed based on the results and outcomes of nearly four years of intensive research and analysis, stakeholder consultation and joint collaborative work in the development and implementation of measures and activities to develop skills, foster cooperation and exchange and improve employability. The core objective of the strategy has been defined as **“Attracting and upskilling a qualified workforce for a smart and sustainable rail sector in Europe”**. The skills strategy is summarised in Figure 3.

**FIGURE 3: LONG-TERM SKILLS STRATEGY FOR THE RAIL SECTOR**



Source: STAFFER WP 7, Deliverable 7.1

As shown in Figure 3, the skills strategy is based on **three main pillars**:

- The first pillar consists of measures and activities **improving employability, attractiveness** of rail as an employer and for young talents and for a more diverse workforce.
- The second pillar describes a set of measures, actions and activities related to the **provision of state of the art and future proof occupational education and training** in the rail sector.

- The third pillar consists of skill related as well as other measures and activities that should facilitate the implementation of the European Rail Area and the **transition from national to European mindsets**.

For each of these three pillars, the skills strategy has identified key fields of action and specific activities to be carried out. In addition to defining specific activities for carrying out the skills strategy, the action plan also presents ideas for gaining political and financial support from European, national and regional level actors and sources, for developing structures and practices guaranteeing visibility and voice at all levels of government, and finally a structure for coordinating, monitoring, and adjusting the skills strategy with a special focus on the shorter- and medium-term.

## 4 KEY FIELDS OF ACTION

### 4.1 Introduction

The key fields of action are defined as the core elements of the long-term skills strategy for the rail sector. This section introduces these key fields and then presents specific activities to be carried out within each key field or thematic cluster.

The key fields of action were identified in consultation with all STAFFER partners. The five key fields of action are:

- Improving the attractiveness of rail and fostering diversity
- Cooperation between the rail sector and vocational education and training as well as higher education institutions at EU, national and regional level
- Development of new, future-proof and needs-oriented VET courses and programmes at different EQF level (i.e. EQF level 3 – 8)
- Promotion of “Rail Erasmus”: Mobility and exchange opportunities in initial, higher and further vocational education and training
- Promotion and enabling mobility and exchange (of staff) in cross-border railways and communication across borders



It should be noted here that the key fields of action – though not exactly matching or coinciding – are in line with the policy recommendations presented in STAFFER D 8.3. The question of coordinating implementation of the STAFFER action plan beyond the project lifetime is addressed in sections 7 and 8 of this document. In all cases participation in any coordinating project or organisation would be completely voluntary.

### 4.2 Improving the attractiveness of rail and fostering diversity

The attractiveness of the railway sector to potential workers is a major challenge for the sector. Previous research into this topic concludes that the factors influencing this problem include working conditions, frequent management changes, remuneration, lack of investment, but also a varying perception of railway sector jobs between employees of the sector and the public as well as lack of awareness of the different job opportunities in the sector and a high gender

imbalance. A key objective of the skills strategy is therefore improving the image and visibility of job opportunities in the rail sector through a communication / marketing strategy.

STAFFER Task 7.2 identified the central components of such a marketing strategy consisting of goals, target groups, messages, communication methods, a budget and specific actions based on background research. With the identification of the goals, the target groups were identified together with partners. In many cases, these were students from schools and universities, as well as recent graduates, but the importance of attracting experienced professionals was also stressed. Furthermore, special attention was to be paid to groups such as people with a migrant background and from priority neighbourhoods. As the sector also has a large gender imbalance, women were also identified as a target group. Different mechanisms and means of communications were determined through research, which was then compared to actions already taken by the partners in the project. From this, gaps in communication channels could be identified, as well as best and innovative practices of communicating with target groups.

In order to communicate with these groups, the messages used were of vital importance. It was important on the one hand to show the attractive sides of railway sector careers, while staying authentic and reflecting the social value of a career. Furthermore, it became clear, that for one the messenger is just as important as the message. Therefore, it was important to use ambassadors from companies who can relate to the target groups and provide an authentic image of working for an enterprise in the railway sector.

The main recommendations of Deliverable 7.2 focused on building ambassador networks, collaborative marketing between institutions of higher learning, suppliers and operators, incentivising and rewarding workers, also in terms of actions that show commitment to company culture, promoting diversity and going outside of the railway bubble. With these suggestions, it may be possible to provide a better image of the railway sector and improve visibility for future candidates.

### **4.3 Cooperation between the rail sector, vocational education and training and Higher Education Institutions at EU, national and regional levels**

STAFFER's experience shows that collaboration between railway companies, VET providers and HEI's (Higher Education Institutions) is crucial to achieving the project's main objectives:

- Increase the attractiveness of the railway sector in general and of training programmes for railway professions in particular.

- Design and implement training programmes that meet the present and future training needs of the railway sector in terms of skills and competencies.
- Identify gaps in the sector's demand and supply of qualified talents and workers also in quantitative terms, including skills and labour gaps in cross-border railway operation and infrastructure.
- Create pools of people skilled in the various job profiles of rail transport, who are immediately employable by companies in the sector.

To this end, railway companies should cooperate closely with VET providers and HEIs in the following activities:

- Carrying out rail sector awareness sessions in secondary and high schools to inform young students about training programmes and the resulting job opportunities in the railway sector.
- Attracting the so-called “domain changers” (workers who intend to change the domain or sector of their job).
- Updating new and emerging skills and job roles.
- Updating existing rail related job/occupational profiles and jointly define new profiles.
- Designing, customising and continuously updating course contents.
- Collaborating in selection of participants and teaching activities.
- Hosting technical visits and internships.
- Issuing scholarships for students.
- Assessing student performance and the quality of teaching.

These activities are described in more detail as part of section 5.3 below.

#### **4.4 New VET courses and programmes at different EQF levels**

STAFFER WP4.5 presented a highly structured analysis of training/education and mobility programmes for six main categories of railway worker (Train drivers, Rail traffic/ operations technicians, Railway systems technicians, Railway systems engineers, Rail traffic/ operations engineers, and Rail transport engineers) at six different EQF levels ranging from 3 (secondary/upper secondary level) to 8 (PhD).

The results are highly useful because they describe a very large number of existing and proposed programmes using a consistent framework. This enables training and educational institutions to easily understand differences and can serve as a first step in developing a common set of programmes across Europe (thereby helping support the goal of creating a European mindset for railways).

This process started within the STAFFER WP6, in which new training programmes were implemented and existing ones adapted in the form of pilot projects based on the outputs of WP4. For example, five pilot VETs at EQF levels 3-5 were implemented under WP6.5 and eight pilot VETs at EQF levels 6-8 were implemented under WP6.6 (seven pilot projects implemented individually by STAFFER partners and a summer school on The European Railway System organised at Sapienza University of Rome from 10 to 19 July 2024).

But this virtuous process of updating European training programmes to consider the new skill needs of the railway sector is expected to continue even after STAFFER has ended. For example, if only EQF levels 6 to 8 are considered, it is expected that STAFFER partners, in addition to the already mentioned 7 pilots, will be able to implement a further 17 training programmes after the end of the project (the complete list can be found in Deliverable 6.6).

It is interesting to note that a profile for business/management could be added to the six groups of railway occupational profiles identified by STAFFER to include customer facing staff, administration, and management jobs. With this addition the training programmes developed by STAFFER would have covered almost all jobs in the railway sector. Given the resources available, STAFFER focused on the more technical job profiles, but these new profiles could be added as the Railway Sector Skills Strategy is refined and improved in the future.

In addition to developing the programmes, WP4.5 summarised existing mobility programmes at all EQFs. The work is unique in the sense that it brings together information on several types of mobility programmes ranging from the very popular ERASMUS+ student exchanges to opportunities for double, multiple or joint degree programmes. In WP6.2 this programme database was further enriched with the development of relatively new BIPs (Blended Intensive Programmes) and other programmes. Moreover, a new Rail Programmes website concept has been designed, with the intention of creating a platform that includes all rail-related educational programmes and internship opportunities offered by rail companies in Europe, as well as application information.

Several specific activities presented in section 4.5 below describe creating new training and mobility programmes at all EQF levels and for all occupational profiles considered by STAFFER (students, apprentices and employees in railway companies). One specific activity concerns consolidation, management and updating of all information associated with rail education programmes at different levels on a unique large portal, linked to each of the websites of the institutions that provide the different programmes.

## 4.5 Rail Erasmus: Mobility and exchange opportunities in initial and further training

An important and growing challenge faced by the European railway workforce is the concurrence of national systems of railway education and training with the growing need for technological and operational harmonisation exemplified by the introduction of European technical solutions, coordination and harmonisation. Examples include railway traffic control (ETCS and ERTMS) and closer coordination of cross-border rail infrastructure development to facilitate effective functioning of rail freight corridors and long-distance passenger railways.

One major result of the STAFFER Work Packages on education and training was the finding that this co-existence of European and national rules has led to a situation where railway vocational training and education – particularly in operational occupations and infrastructure management – still is entirely shaped by national specificities, rules and requirements while cross-border topics and contents related the functioning of the European Railway Areas and interoperability are no major part of curricula.

This situation needs to change for several reasons: First, because of the implementation of the Single European Railway Area and the need to develop sufficient staff that matches the future demand for interoperability knowledges and skills. And secondly, because increasing parts of the curricula in many occupational profiles relate to learning contents and outcomes that are defined by operational or technical specifications that are defined at the European level.

Thus, the promotion of cross-border learning mobility in initial and further learning and training for apprentices, trainees, young talent or existing staff is important. The same relates to train-the-trainer competence development and possibilities to exchange good practice solutions and programmes, e.g. in the field of ETCS and/or ERTMS training. This would also enable railway companies to join forces and collaborate on parts of learning curricula that are related to contents that is the same across borders (i.e. general basic rules).

However, as research and discussion with peer and focus groups or the analysis of cross-border learning mobility of apprentices and trainees in STAFFER has shown, that the use of funding mobility such as the Erasmus+ programme in railway is rather underdeveloped when compared to other transport modes (e.g. aerospace, maritime shipping, logistics, automotive).

Against this deficit, the STAFFER Work Packages and tasks addressing issues such as cross-border staff exchange (e.g. Task 4.4) or developing concrete ideas and/or implementing pilots for the STAFFER student (Task 6.2) or the apprenticeship programme (Task 6.3) have been very important and need to be continued in order to move from isolated good practice examples to offers for the whole rail sector.



## 4.6 Mobility and exchange in cross-border railways and communication

The transition from national to European mindsets should be regarded as a huge generational requirement in railways: despite 25 years of EU level initiatives to foster the development of a single European Railway Area (by opening the rail transport market to competition, cross-border rules for interoperability and safety and developing rail infrastructure), the railway sector is still is deeply influenced by national technical adaptation, traditions, rules and practices.

This is also very visible in the field of skills and occupational development and therefore there is a strong need to promote the development of strengthening European mindsets, competences and skills by more cooperation of VET and academic institutions and programmes that so far hardly exist for example at Bachelor or Master level.

Therefore, from the perspective of all educational qualification levels (including EQF 3-4) as well as railway staff, skill development in all countries and railway companies as well as the rail supply industry increasingly should be oriented towards the acceleration of standardisation of technical, operational and infrastructure related rules and standards. Referring to cross-border initiatives developed in the context of STAFFER on ERTMS, a respondent to the STAFFER survey on new skills needs in railway operation and infrastructure management commented: *“There is the need to develop harmonised training modules and contents at European scale to avoid a situation where 27 EU Member States need to do this individually”*.<sup>5</sup> Although the process of standardisation and harmonised application of ERTMS is still ongoing and national rules and specifications exist, this comment highlights the importance of it going hand in hand with the harmonisation of training on what is already established for all EU Member States (e.g. the ERTMS Specifications issued by the Regulation (EU) 2023/1695 on the CCS Technical Specification for Interoperability). Of course, still the largest part of the curricula and training contents has to reflect the specific national rules and specifications.

Increase the number of and further refine (e.g. digital skills) interoperable occupational profiles: i.e. reflecting the increased number of railway personnel which are involved in cross-border rail transport (freight, long-distance passenger, regional/local rail in border sections, etc.).

In railway operation, drivers who must communicate with the infrastructure managers on critical safety issues must have language skills in the language indicated by the infrastructure manager

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<sup>5</sup> STAFFER Deliverable 2.1.

concerned. Their language skills must be such that they can communicate actively and effectively in routine, adverse and emergency situations.

A sound target system on railway communication and a migration strategy shall be laid down in the legal framework. In rail transport, sufficient language skills of train drivers are necessary to ensure safety in regular, disruptive and emergency situations. The current system, which requires drivers to know to a sufficient level the languages of all the countries in which they are licensed to operate, is undoubtedly onerous but the introduction of an alternative single European operating language, such as English, appears to be even more so. In this regard, it would seem more useful to define, e.g. through a scientific study, what level of language and railway vocabulary knowledge a train driver should possess. Moreover, additional means, such as automatic translators, can be explored that can assist the operators to facilitate communication across language boundaries.

Railway stakeholders, in particular railway operators and infrastructure managers lag in comparison to other transport sectors when it comes to making use Erasmus mobility funds for learners and Erasmus+ Funds to develop cross-border approaches to learning and skills development.

However, for future generations of railway undertakings leaders at company or sector level such experience is important to develop more open and European mindsets and thinking about the own job. Therefore, there is a need for railway specific mobility projects (or even a sector-wide framework) that provides opportunities for apprentices, students as well as trainers to learn abroad and develop own competences.

As pilot experiences developed in the STAFFER project shows, internationalisation strategies in initial and further learning require a clear political will and support from higher level management. Therefore, also the development of management and HR capacities and resources for internationalisation in the field of initial and further training is important.

## 5 SPECIFIC ACTIVITIES

STAFFER partners and co-leaders of the different work packages and tasks in collaboration and exchange have developed and defined **53 specific activities** – some of them implemented already during the last two years of project funding – that are regarded as essential for the rail related jigsaw paving the way for a European sectoral skills strategy for the whole rail sector that matches current challenges of the railway workforce and future needs.

In the following parts of this section and in the following section 6 (in relation to the important issues of coordination, visibility and voice), such activities are introduced and described briefly in relation to main objectives and contents. Further details, including key stakeholder groups involved, first suggestions on performance indicators, possible funding sources and ideas on the timeline are presented in tables in the annex to this report.

### 5.1 Improving the attractiveness of rail and fostering diversity

Increasing the rail sector's attractiveness is of central importance to tackle the sector's current and future worker shortage. The central aim of these activities is to effectively communicate an accurate image of working in the rail sector and increase the visibility of career options. Potential candidates should gain better insight into the many attractive career options that currently exist in the sector.

The proposed activities are listed in Table 5. They include actions describing the connection between the railway education programmes and the career possibilities of such an education. All the actions are designed to increase sector visibility by on the one hand coordinating actions and collaboratively marketing between institutions to pool resources and, especially in the online space, increase the audience of marketing actions.

It should be noted that the **ten specific activities** described below are largely in line with the policy recommendations developed in STAFFER WP8, which also call for the formation of ambassador networks on an EU and company level and to raise the sector's visibility through marketing campaigns and allocating resources for these campaigns.

Finally, the recommendations include specific actions designed to increase the attractiveness of the rail sector through mentoring programmes for women and through fostering a company culture that attracts candidates from all different backgrounds to tackle the shortage of workers in the sector. This includes also attracting workers and citizens with a migrant background, refugees as well as practises of cross-border recruitment of workers and talents.



**TABLE 5: SPECIFIC ACTIVITIES OF IMPROVING THE ATTRACTIVENESS OF RAIL AND FOSTERING DIVERSITY**

Specific activity's code	Title	Brief description / objectives
SpA 1.1	Formation of ambassador networks for company representation	An employer incentivises employees to represent the company as ambassadors at specific recruiting events or as digital ambassadors through company's website and social media.
SpA 1.2	Cooperative Marketing between employers and education institutions at real life events such as job & educational fairs or school and company visits	Employers and education institutions participate in marketing events together to provide a clear image of the profession, the required skills for the profession and how the education leads to this profession.
SpA 1.3	Cooperative marketing between HEIs, VET and schools	Educational institutions combine resources to reach a larger audience such as visiting schools, using common marketing materials or resources through social media, advertisements, study pages etc.
SpA 1.4	Rewards and incentive programmes for employees committed to fostering inclusion and improving company culture	Employees who develop actions that are in line with desired company culture and inclusion should be incentivized or rewarded.
SpA 1.5	Engaging with influencers outside of the railway bubble	Engaging with influencers outside of the railway bubble may help to address target groups, which may not be primarily engaged with the railway sector. This includes in-depth looks into the company and trying out certain professions.
SpA 1.6	Mentoring programme for female leaders	With a focus on gender diversity the Mentoring Programme for female engineers in railways was kicked off. Mentoring tandems are built across borders and come from the rail sector and related academic institutes.
SpA 1.7	Building European Mindsets	Development and dissemination of promotion material (testimonials, video-clips, etc.) that highlight motivation of railway workers in cross-border railways with the aim to develop better understanding and raise the interest for working in cross-border railways.
SpA 1.8	Improving attractiveness of rail / fostering diversity	Work on career development paths focused on diversity (gender, youth ...). Fostering learning culture in the rail industry.
SpA 1.9	Addressing labour shortage and attracting talent: Dissemination of good practices and innovative approaches, including of railway related information provided at schools and in school curricula.	Follow-up activity mirroring the EU Action plan to tackle labour and skills shortage from the rail sector perspective involving the European Sectoral Social Dialogue Committee for Railways.
SpA 1.10	Skills and Labour Forum "Transport and mobility" Addressing labour and skills shortages in railways and other transport modes	Key challenges related to skills, labour shortage and job attractiveness and working conditions are quite similar in all transport and mobility sectors. There are also joint interests such as promoting diversity, female employment and developing new forms of training, including apprenticeships- Based on this a joint Forum that may include mixed working

Specific activity's code	Title	Brief description / objectives
		groups and joint project or policy initiatives would strengthen the voice of transport and mobility stakeholders.
SpA 1.11	Promotion and supporting the implementation of the Social Partners WIR (Women in Rail) Agreement	Based on the CER – ETF Women in Rail Agreement that was signed (2021) the implementation should be supported in particular by exchanging good practices and the promotion of the agreement in more companies
SpA 1.12	Develop rail-specific contribution to the EU initiative and action plan on skills shortage and talent platforms (cross-border recruitment)	Based on a repository of good practices, a joint position of the rail sector (e.g. following the format of the STAFFER policy recommendations) should address challenges and needs of the sector in relation to skills and talent shortages and how to address them
SpA 1.13	Dialogue Forum with trade unions	Exchange and discuss key STAFFER outcomes in relation to attractiveness and diversity in a high-level conference with other transport Blueprints / Skills Alliance, including also relevant trade union organisations

## 5.2 Cooperation between the rail sector and VET/HEI at EU, national and regional levels

Table 6 presents **seven specific activities** designed to consolidate and expand collaboration between railway companies, providers and HEIs at European level initiated within STAFFER. The activities are a direct outcome of STAFFER and all but SpA 2.1 have a short-to-medium term implementation perspective.

Finally, SpA 2.1 has a more medium- to long-term scope, because it concerns the fact that the huge work carried out within STAFFER for identifying the major new skill needs and job profiles emerging in the railway sector should be periodically updated by recurrent (e.g. every 3-4 years) carried out and evaluated at European level with active involvement of key stakeholders of the rail sector.

SpA 2.2 concerns the updating of ESCO profiles based on the six occupational profile groups identified in STAFFER (see Table 3 in section 2 above). This is important because the ESCO database is a unique initiative in terms of attempting to define core skills, competences and occupational knowledges that could provide an extremely useful nucleus for developing European wide occupational profile descriptions. However, the analysis of about 60 occupational profiles that are related to the rail sector (both operation/infrastructure and rail supply industries) have shown that there is a need to update profiles and bring them in line with new skill and knowledge requirements.

SpA 2.3 aims to create a database of VET providers engaged in railway training. Such a database would be important both for the rail supply industry as well as for railway operation and infrastructure management companies and other sectoral stakeholders because it does not exist so far and it would be important for gathering quantifiable information on the supply of railway education and training resources, to identify bottlenecks, possible synergies at the regional, national and transnational levels. Setting up a such a database should be done in exchange and cooperation with other rail-related initiatives, such as the Training Centres Network set-up by the International Union of Railways, UIC which has set-up a Training Centres Network.<sup>6</sup>

SpA 2.4 is a specific activity to establish partnerships between VET providers, HEIs and stakeholders at all educational levels. In STAFFER a pilot activity in this field established a network of Rail Centres of Vocational Excellence by means of the CoVERED (*Centres of Vocational Excellence for Railway Empowerment and Development*). An application for Erasmus+ funding was delivered in May 2024 in collaboration with several STAFFER partners and additional stakeholders from 9 European countries. The project aims to obtain funding from the ERASMUS+ KEY ACTION 2 project under the Call for Centres of Vocational Excellence (CoVE). The project is based on the creation of European “skills ecosystems” consisting of at least one VET provider, one University and one Rail Company (IM, RU or Supplier) and envisages collaboration and mobility among the ecosystem to address current and future skill gaps with innovative training solutions and curricula at EQF levels from 3 to 5.

SpAs 2.5 and 2.6 concerns the promotion of the railway sector in high schools. The first, to be carried out in cooperation between vocational training organisations, higher education institutions and railway companies, serves to inform young people about vocational and university courses dedicated to rail transport and present them with career prospects in the sector. The second, which concerns the introduction of railway topics into high school courses, aims to instil in students a passion for railways.

Finally, SpA 2.7 concerns the collaboration of railway regional clusters with VET providers and Higher Education Institutions to promote the identification and development of new competences.

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<sup>6</sup> <https://uic.org/expertise-development-training/railway-training-centres-network/>.

**TABLE 6: SPECIFIC ACTIVITIES IN THE FIELD OF COOPERATION BETWEEN THE RAIL SECTOR AND VET/HEI AT EUROPEAN, NATIONAL AND REGIONAL LEVEL**

Specific activity's code	Title	Brief description / objectives
SpA 2.1	Skill intelligence: Identification of future skills needs and job roles <sup>7</sup>	Updating new and emerging skills and job roles; collaborate with national good practice in relation to skills intelligence gathering; work with research think tanks and data collection agencies (e.g. Cedefop) focused on skills mapping; utilise existing rail employer groups established at national and regional level together with national centres of expertise to undertake more detailed consultation on changing skill requirements.
SpA 2.2	Harmonise occupational profiles at EU level by updating ESCO profiles	Updating existing rail related job/occupational profiles and jointly define new profiles in collaboration with ESCO and others (Cedefop).
SpA 2.3	Creating a database and network rail related VET schools / institutes engaged in railway training	This activity requires close cooperation with the UIC, which has already set up such a platform, which is currently not fed with data collected by STAFFER.
SpA 2.4	Linking communities of practice and excellence in VET: Intensifying, extending and deepening cooperation between national and regional railway eco-systems	In the light of common challenges and needs, the rail sector is facing, there is a need to intensify cooperation between the rail sector and the VET system at EU, national and regional level and rail related research and skills intelligence.
SpA 2.5	Rail sector Awareness session in secondary and high schools	Increase number of applicants in VET /HEI Increase number of pertinent applications to the Rail job offers
SpA 2.6	Develop and integrate rail specific contributions in primary and secondary school curricula	In order to make the rail sector more visible as an interesting sector and place to work, rail-specific contents should be suggested as curricula in subjects such as informatics, physics or geography.
SpA 2.7	Develop skills and talent pillar in regional rail clusters	Increase the collaboration of regional railway clusters with VET providers and Higher Education Institutions to promote the identification and development of new skills.

### 5.3 New VET courses and programmes at different educational level

Table 7 presents a set of **10 specific activities** designed to continue implementation of new training programmes and adaptation of existing ones based on the outputs of STAFFER.

<sup>7</sup> Also a specific activity/measure in the DRIVES Blueprint

All these specific activities are the continuation of activities already started during STAFFER and therefore would be implemented in the short-to-medium term. For example, at EQF levels 6 to 8, STAFFER partners have already implemented 7 VET pilots during STAFFER, and plan to implement a further 17 training programmes after the end of the project.

More generally, the specific activities presented in Table 7 concern the implementation of new training and mobility programmes at all EQF levels and for all profiles considered by STAFFER (students, apprentices and employees in railway companies). These programmes can be professional courses, single modules or entire bachelor's or master's degrees individually implemented by VET providers or Universities or summer schools, BIPs (*Blended Intensive Programmes*), double, multiple or joint degree programmes implemented in collaboration between several universities.

Further objectives of these specific activities are to harmonise the railway modules delivered within professional and university courses at the European level, to facilitate Erasmus+ mobility in the railway sector and to contribute to building a European mindset for railways. An example are SpAs 3.8 and 3.9 concerning the harmonisation of courses on ETCS and interoperability for different job profiles.

Moreover, SpA 3.1 concerns consolidation, management and updating of all information associated with rail education programmes at different levels on a single information portal, linked to the websites of the institutions offering the different programmes.

A key aspect for all these activities and, in particular, for this last one, crucial for the continuous updating of the dissemination of training offerings in the railway sector at the European level, will be the raising of funds.

**TABLE 7: SPECIFIC ACTIVITIES IN THE AREA OF NEW VET COURSES AND PROGRAMMES AT DIFFERENT EDUCATIONAL LEVELS**

Specific activity's code	Specific activity	Brief description / objectives
SpA 3.1	Database of rail related education programmes on STAFFER website	Consolidate, manage, and update all information associated with rail education programmes at different levels on a single large platform. Main target group are students or apprentices in HEI. A unique portal, linked to each of the websites of the institutions that provide the different programmes.
SpA 3.2	Identification and highlighting (STAFFER Websites, bi-annual rail skills event) of best practices in railway education and training programmes	Benchmarking of existing programmes on the basis of a common methodology and identification of best practices education and training



Specific activity's code	Specific activity	Brief description / objectives
SpA 3.3	New training programmes / content development for EQF level 3-5	Development and implementation of new courses/modules taking into account new skill needs. Target groups: learners at EQF level 3-5 Occupations / topics: train driver and rail specific themes for different occupations.
SpA 3.4	New VET contents and programmes at EQF level 6-8	Development and implementation of new courses/modules considering new skill needs for the following job profiles identified by STAFFER: <ul style="list-style-type: none"> <li>• Railway systems engineer</li> <li>• Rail traffic / operations engineer</li> <li>• Railway transport engineer</li> </ul> Target groups: students at EQF level 6-8. Railway companies interested in offering internships to students and possibly hiring them.
SpA 3.5	New double, multiple or joint degree programmes	Development and implementation of new degree programmes in English or other common languages run jointly by STAFFER partner universities and others considering new skill needs identified by STAFFER with the aim of providing students with a systemic view of European rail transport
SpA 3.6	Summer school on “The European Railway System”	Provide university students from different backgrounds with a systemic view of European rail transport and create passion for the sector.  The course comprises lectures and seminars held by academics, representatives of institutions (ERA) and railway companies on various topics (such as EU regulatory framework, interoperability, ERTMS/ETCS, sustainable powertrains, green mobility, safety management) and visits to traffic control rooms, maintenance workshops, laboratories, construction sites, railway museums, etc.
SpA 3.7	Establishment of multi-stakeholder working groups addressing the skills building process	Creation of working groups at EU, national and regional level that can continue the work of identifying the training needs of the railway sector and translating them into training programmes. These working groups (consisting of VET/HEIs, Rail companies and operators, rail institutions, rail and transport organizations) should exchange best practices and data on skills gaps and skills needs in the rail sector and should meet periodically (at least twice a year).
SpA 3.8	Exchange, collaboration and development of harmonised concepts for ETCS training	As research and consultation as well as a pilot activity in the context of STAFFER has shown, currently ETCS training is very fragmented and divers: Each railway company develops its own training material and curricula. At the same time, the share of training contents that is defined by EU level rules and standards is increasing. Therefore, for cost-efficiency as well as conversion, transnational collaboration aiming at the development of harmonised contents and modules of ETCS training would provide concrete added-value.
SpA 3.9	Developing harmonised modules and training offers on interoperability for different occupational profiles	The number of railway staff of different occupational profiles (e.g. train drivers, traffic control, cross-border infrastructure planning, management and maintenance) is growing and is expected to grow further in the future.  Against this, the development of European-wide modules on those skills, knowledges and competences that are based on already harmonised European rule and/or that require cross-



Specific activity's code	Specific activity	Brief description / objectives
		border cooperation would provide an added value from the EU perspective as well as the perspective of individual companies.
SpA 3.10	Developing training modules and webinars new emerging topics in European railways	Based on already existing company practices of developing training material on new emerging topics such as Green Skills in railways, Building Information Modelling (BIM), artificial intelligence, cybersecurity, safety and resilience, etc. such contents should be made available for a broader community at EU level.

## 5.4 Rail Erasmus: Mobility and exchange in initial, higher and further training

Table 8 presents **seven concrete measures and activities** have been developed in STAFFER that aim to promote more learning mobility and the opportunity to visit companies or VET institutions in other countries for a learning period or internship.

As already mentioned, the rail sector – in contrast to other sectors – is not very present in engagement of railway companies in providing apprentices, trainees or dual students with the opportunities to visit other countries and companies or VET institutions abroad for learning visits or internships. This has also become quite clear in the context of analyses of Erasmus VET learner mobility projects that were carried out on the basis of the Erasmus+ projects database.<sup>8</sup> At the same time railway companies so far have been quite reluctant in joining the European Alliance for Apprenticeship (EAfA).

On the other hand, interviews with company representatives responsible for apprenticeships and initial vocational education and training and surveys of apprentices that have been engaged in transnational exchange programmes, have shown that both companies and apprentices are very interested in learning mobility of apprentices, trainees and/or students as the clear added value is recognised and regarded as important.

Against this, in the context of the STAFFER Work Package 6.3 ideas have been developed to promote Erasmus mobility and exchange projects for apprentices and other eligible initial learners at company level by supporting companies, VET schools in developing mobility projects and applying for Erasmus+ learner mobility co-funding. This has been done by elaborating practical information, guidance and checklists and answering practical questions in the context

<sup>8</sup> See Deliverable 6.3 on the STAFFER Apprenticeship Mobility Programme.

of applications for Erasmus+ funding. Furthermore, rail sector companies should be encouraged to join the EAfA alliance (SpA 4.1, 4.2 and 4.3)

In STAFFER Task 6.2 activities and conceptual ideas were developed that address the lack of opportunities for students to apply for internships in railway companies. In the context of this task, and based on the experience of pilot projects, the concept of a long-term Rail BIP (Blended Intensive Programme) was developed (SpA 4.4) that is supported by a database of internship opportunities. Such initiatives should be supported by bilateral partnership agreements between higher education institutions and rail sector companies (SpA 4.5 and SpA 4.6).

Considering the rapid development of blended, remote and virtual learning as well as good practices in other transport sectors, mobility learning experiences might also be complemented by virtual courses in the context of a “Virtual Railway Academy” (SpA 4.7).

It should be noted that such an Academy approach would also facilitate activities and initiatives that have been developed in other STAFFER tasks in relation to cross-border railway operation, communication and language as shown in the following section 5.5.

**TABLE 8: SPECIFIC ACTIVITIES IN THE AREA OF RAIL ERASMUS: MOBILITY AND EXCHANGE IN INITIAL, HIGHER AND FURTHER TRAINING**

Specific activity's code	Title / Topic	Brief description / objectives
SpA 4.1	Long-term Rail BIP (Blended Intensive Programme)	Objectives: To learn about the different railway realities throughout Europe. To encourage a European scale thinking about the development of railways. To promote the exchange of experiences in a multicultural and multidisciplinary environment. To promote technological innovation.
SpA 4.2	<i>Rail Apprentices Mobility Programme: Guidance and practical support for companies</i>	Providing guidance and practical support for companies and apprentices for gaining learning experience and knowledge in another country.
SpA 4.3	<i>Rail Apprentices Mobility Programme: Establishing a platform and pool for interested rail companies, VET institutions</i>	Developing a platform providing practical guidance and information for companies in the rail sector as well as VET institutions that are interested in providing learning mobility offers to apprentices and/or trainees and dual students. The platform may also facilitate the development of mobility project ideas and programmes and joint Erasmus+ applications for mobility projects.
SpA 4.4	Database of rail related internships on STAFFER website or other means	Consolidate, manage, and update all information associated with Erasmus+ traineeship opportunities offered to students currently enrolled in higher education institutions (Bachelor, Master students and PhD candidates) and to recent graduates by rail operators and suppliers on a single large platform. Materialise a unique portal, linked to each of the websites of the international or Erasmus+ office of rail higher education institutions and each of the website of rail operators and suppliers offering internship opportunities.

Specific activity's code	Title / Topic	Brief description / objectives
SpA 4.5	Establishment of bilateral Erasmus agreements between all STAFFER partner universities and any other European universities wishing to join	The realisation of Erasmus bilateral agreements is the necessary precondition for a series of joint training programme and mobility initiatives, such as the simple Erasmus student mobility, new double, multiple or joint degree programmes, the Long-term Rail BIP (Blended Intensive Programme).
SpA 4.6	STAFFER Website: "Virtual Railway Academy"	Creation of a web-based catalogue of physical and online training offers for staff in rail in English or other languages.
SpA 4.7	Create a platform for gathering good practice and promotion of apprenticeship and learners' mobility in the rail sector	Developing a platform to collect good practices from other sectors and pool rail good practices regarding the added value of apprenticeship as such and of apprenticeship mobility to promote the attractiveness of the railway as a career path.
SpA 4.8	Rail sector Apprenticeship Ambassador Programme promoting learning mobility	Establishing a network made up of current and former apprentices to promote learning mobility opportunities for rail apprentices.

## 5.5 Staff mobility and training programmes in the field of cross-border railway, communication and language

Table 9 presents **six specific activities** developed in STAFFER designed to intensify collaboration across borders (e.g. on ETCS/ERTMS, cross-border corridor management, joint development of digital support tools in the field of foreign language cross-border railways, etc.). These activities are very much driven by needs identified by railway companies and will help support staff, experts and managers, trainers or professional talent development. Most of the activities have already been tested by pilot activities or have been concretised and designed jointly in working and focus groups.

**TABLE 9: SPECIFIC ACTIVITIES IN THE AREA OF MOBILITY AND EXCHANGE IN CROSS-BORDER RAILWAYS, COMMUNICATION AND LANGUAGE**

Specific activity's code	Specific activity	Brief description / objectives
SpA 5.1	Expert and practitioner Focus Group Cross-border communication and language	EU level exchange and collaboration with the longer terms vision to develop occupational profiles related to cross-border railway operation and interoperability
SpA 5.2	ERTMS learning programme for "Rail Newcomers" and ERTMS experts' network	Regular exchange on skills and training needs on ERTMS, developing harmonised learning modules, carried out activities of further training and exchange of ERTMS experts at company



Specific activity's code	Specific activity	Brief description / objectives
		level and beyond. A pilot activity will receive Erasmus+ funding from September 2024.
SpA 5.3	Modernising the occupational profile and skillset and defining common skills needs and knowledges for train drivers	Based on a comprehensive analysis of current training programmes and curricula of highly relevant occupational profiles (e.g. train drivers, traffic controllers) the vision of a nucleus of common European contents and quality standards might be developed in a pilot activity.
SpA 5.4	Development of online course modules and material	Based on the STAFFER pilot experience of developing a MOOC on Building Information Modelling (BIM) in railways or the development a multi-lingual online course on brake functioning.
SpA 5.5	Establishing a competence centre on railway language (training)	The exchange between railway undertakings on experiences, challenges and needs in relation to foreign language training for staff involved in cross-border railways needs to be continued and extended due to the strong interest of the involved companies in this topic. There is a need to exchange on good practices, discuss and develop joint opinions on digital solutions and develop common references (e.g. glossaries) and standards for foreign language training.
SpA 5.6	Train-the trainer exchange and joint seminars on cross-border railway skills needs	Addressing different staff groups and occupational profiles as well as train-the-trainer perspectives, also through extensive use of the possibilities offered by digital technology, such as online seminars, video lessons, simulators and other digital tools.
SpA 5.7	“Rail Interoperable Staff Erasmus”: Creating opportunities for staff exchange, job shadowing and other format for interoperable staff (traffic control, train drivers, etc.)	Develop international staff exchange and job shadowing programmes between different railway companies and ‘interoperable’ categories of workers.



## 6 COORDINATION, GOVERNANCE AND FINANCIAL SUSTAINABILITY

### 6.1 Introduction: Why there is a need for governance and coordination

The long-term strategy and action plan that has been developed jointly in the context of the STAFFER Blueprint project since November 2020, has brought together representatives of nearly all relevant stakeholders in the rail sector either as active partners or co-leaders of participating partners or as members of steering and advisory groups.

Focussing on skills, workforce and talent development, the STAFFER Blueprint is a unique experience of transnational collaboration between the rail supplier sector, railway operators and infrastructure managers as well as quite a large number of educational providers, coordinated by the University of Genoa in consultation with a steering group of all partner organisations and monitored by an Advisory Board consisting of highly relevant stakeholders from the European and national levels, including the European Union Agency for Railways, the European Rail Research Advisory Council, EU Commission DGs and representatives of European Trade Union Federations in the sector.

Concrete results that will continue beyond STAFFER already have been kicked off and several follow up/continuation activities have been put in place such as the Erasmus+ application for creating a network of Railway Centres for Vocational Excellence or transnational collaboration and pilot activities concerning the exchange of apprentices and setting up a European Rail Erasmus platform. Other activities that have been developed out of the STAFFER Blueprint are also likely to continue, e.g. the intensified collaboration of rail related higher education institutions, as well as the collaboration of companies on thematic issues or in the field of apprentices, learner and staff mobility and exchange.

However, there is no automatism of continuation for many initiatives planned under STAFFER, and included in this document as Specific Actions, which require coordination between different actors at European level.

Given the multitude and complexity of skills needs in the rail sector due to the duality of national and European systems and the significant workforce challenges facing the sector in terms of skills adjustments, demographic change, attractiveness and skills shortage and other needs (implementing the Single European Rail Area, interoperability, etc.) it is regarded as important that the implementation of the long-term strategy and STAFFER's overall goal of “*Attracting and*



*upskilling a qualified workforce for a smart and sustainable rail sector in Europe*” receives support and will be coordinated at different levels.

Considering the concrete activities that are suggested in this action plan and roadmap it is clear that implementation of a coherent skills strategy including continuous articulation of skills needs at transnational and lower levels could be ensured by implementing a European framework or arrangement of coordination that represents the whole sector and would represent national, regional and local level actors and rail-related networks in fields such as vocational and higher education and vocational training, research and development, business organisations, rail clusters, social partners and not least companies in the rail supply, railway operation and infrastructure management.

Such a framework should be lean and efficient, avoiding the consumption of additional burden and resources but it is needed as so far there is no existing framework or partnership that would be able to fill this role of coordination and articulation.

Besides creating a voice for railway skills at the European level, exchange of good practices in educational or scientific excellence or addressing urgent challenges (skills shortage, becoming more attractive for underrepresented groups, etc.) European coordination would also address the aspect of action plan “ownership” and be of practical relevance for the implementation of the long-term skills strategy. In particular the latter would also be crucial for obtaining the needed political, financial and other support.

## **6.2 Specific activities aiming at obtaining political and financial support, governance, visibility and voice**

In order to develop effective mechanisms and practices of coordination, a number of specific activities are suggested that also take into account the fragmented character of the railway sector in terms of stakeholders involved in skills development, higher education institutions, business organisation and associations at European, national and local levels.

As shown in the suggestions for specific activities in Table 10 below, there are different options and scenarios of installing and organising and providing support in political and financial terms and guaranteeing a minimum level of coordination, visibility (STAFFER website and platforms) and voice.

However, whether it is organised under the umbrella of an existing European or transnational institution or organisation, or whether a new structure such as Skill Alliance is created on a large

scale, as is the case in other sectors<sup>9</sup>, setting-up a form of coordination at European level would avoid a scenario of “before STAFFER”: the more or less isolated co-existence of isolated small projects in the field of VET and HEIs, bi-lateral exchange across borders, research and skill activities and other measures that might have created added value for the directly involved parties but definitely not for the European rail sector as a whole.

Therefore, the **seven measures recommended** below should be regarded as mutually complementary, strengthening skills and workforce development of the rail sector in Europe as a whole.

**TABLE 10: SPECIFIC ACTIVITIES AIMING AT OBTAINING POLITICAL AND FINANCIAL SUPPORT, GOVERNANCE, VISIBILITY AND VOICE**

Specific activity's code	Specific activity	Brief description / objectives
SpA 6.1	Sustainability and gaining stakeholder support	Supporting the implementation the long-term strategy and ensuring sustainable overall support of key stakeholders and policymakers
SpA 6.2	Create a European platform for Rail Skills	Act as a platform for Rail Skills Agenda and stimulate its continuous development as well as regular updates in the light of new needs
SpA 6.3	Set-up strong links of skill intelligence	Create links between rail businesses and VET providers for a widespread sharing of results of intelligence update outcomes
SpA 6.4	Bi-annual high-level railway HR and skills conference	Bi-annual meeting focusing on new emerging trends and skills needs in railways from different perspectives: Europeanisation, cross-border skills and talent needs, good practices, apprenticeship development and attractiveness of the sector for talent. The event should be supported by a bi-annual large survey of HR Directors.
SpA 6.5	Providing a platform and forum for informing about needs and creating shared visions	Build a common dialogue platform to inform companies and VET providers about the different needs and create a common vision for the future
SpA 6.6	Rail-specific commitments and contributions to EU initiatives on skills and sustainable employment	Develop a rail-specific contribution to the EU Pact for Skills and EU Action plan to tackle labour and skills shortages
SpA 6.7	Conducting feasibility study and stakeholder consultation / survey on added value and interest in joining European Railway Skills Alliance	Draw up a feasibility study and carry out a survey for addressing rail stakeholders and actors outside STAFFER to gather their opinion on the added value a European Railway Skills Alliance could have and their possible interest in joining it.
SpA 6.8	Setting up a European Rail Skill Alliance	Following the examples of other sectoral blueprints (e.g. automotive, construction, microelectronics) a longer-term vision would be to set-up a European Rail Sector Skills Alliance would represent the whole rail sector, providing support and services related to skills, talent recruitment and promotion to rail companies, education and training

<sup>9</sup> Such as the *Automotive Skill Alliance* or the *Europe Chips Skills Alliance*.



Specific activity's code	Specific activity	Brief description / objectives
		institutions and skills intelligence/research as well as rail related EU institutions.



# 7 IMPLEMENTING THE ACTION PLAN

## 7.1 Introduction

Since November 2020, the STAFFER project has implemented numerous activities related to gathering evidence, needs and challenges related to requirements in the field of railway skills development with focus on traditional and newly emerging occupational profiles and tasks. These activities are summarised in the deliverables and reports published on the STAFFER website.

In addition to these completed activities, STAFFER partners are also carrying out collaborative work activities that are ongoing and that are designed to last beyond STAFFER. These activities include:

- the development of transnational mobility and exchange programmes targeting specific groups of learners (e.g. students, apprentices or railway staff);
- the compilation of databases of rail related VET and HEI programmes and its documentation/integration in the STAFFER website;
- designing, implementing, and evaluating new railway training programmes and courses organised by HEIs, VET providers or railway companies (e.g. railway summer schools for university students and for engineering talents at company level);
- development and implementation of e-learning or MOOC modules and courses as well as other activities addressing new needs in further education and training;
- targeted pilot activities that are developing ground for more comprehensive follow-up measures, e.g. in the field of ETCS training, train drivers training or foreign language training or support and mentoring of female leaders in railways;
- measures and recommendations to improve the image of rail as an attractive place to learn, work and make a professional career, including becoming more attractive for young talents, women and other currently underrepresented groups.

Furthermore, several STAFFER pilot activities have already resulted in applications for co-funding from the Erasmus+ programme such as the mobility (exchange) programme of apprentices between SNCF and DB<sup>10</sup>, the Rail CCS Education Programme focussing on developing joint modules and further education programmes on ETCS lead by DB InfraGo<sup>11</sup>

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<sup>10</sup> Successful application as an Erasmus+ mobility project with a duration of 6 months, ending November 2024.

<sup>11</sup> Successful application as an Erasmus+ transnational cooperation project with a duration of 12 months. Project will start in September 2024.

and the application of several STAFFER partners plus other partners coordinated by CNAM in the context of the Erasmus+ 2024 call for tender for “Centres of Vocational Excellence”.<sup>12</sup>

Finally, STAFFER has developed recommendations for the future. In fact, this document presents (Chapter 6) a list of more than 50 specific activities in six key fields of action which would contribute to the longer-term strategic objectives of improving railway sector skills, employability and attractiveness. Importantly, these activities are also in line with the policy recommendations that have been elaborated jointly by the representative associations, of the rail sector, CER and UNIFE. These recommendations are targeted towards policymakers and stakeholders at the EU, national, regional, local and company levels all of whom are regarded as the key actors of implementation of the proposed policies and activities.

## 7.2 Possible Scenarios for implementing the Action Plan

There are three basic scenarios for transnational cooperation on implementing the STAFFER Action Plan. As the following subsections describe, these scenarios differ in terms of implemented activities, level of effort, and in relation to actively involved stakeholders.

### SCENARIO 1: NO COORDINATION OF STAFFER ACTION PLAN IMPLEMENTATION

Scenario 1 assumes that no coordinated follow-up activities are needed to carry on the work started in the STAFFER project. It is based on the idea that STAFFER successfully identified and developed measures and identified potential partners to address the railway workforce needs currently and in the foreseeable future, and that existing organisations can successfully implement these measures.

Under this scenario railway sector stakeholders would implement the STAFFER Action Plan measures either within their own organisation or together with selected partners. There would be no specific European coordination of implementing the STAFFER action plan of the long-term skills strategy. Activities (e.g., sharing of best practices, updating skills needs, developing new measures) that go beyond of what takes place within existing organisations may or not may be organised and supported by representative sectoral associations and will have a temporary, project-related nature in terms of scope and nature.

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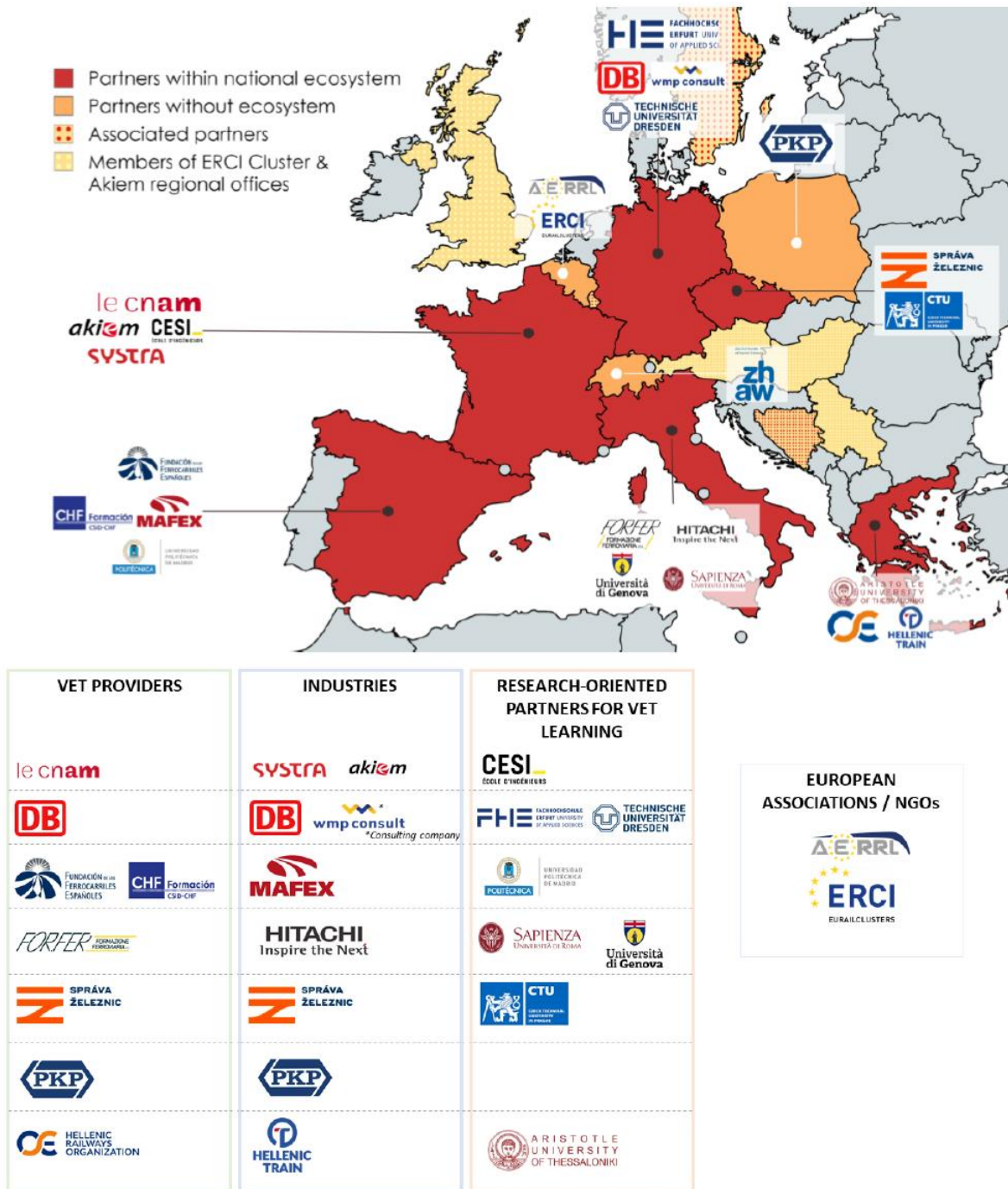
<sup>12</sup> Application delivered in June 2024; decision still pending

## SCENARIO 2: SELF-COORDINATED FOLLOW-UP ACTIVITIES

Scenario 2 assumes that self-selected groups of railway sector stakeholders can implement the STAFFER Action Plan measures without any coordinating organisation. This scenario does not provide for the continued coordination and communication mechanisms that have been established by STAFFER, i.e. the website as a central hub, the document repository, advisory board and annual STAFFER meetings of full and associated partners with EU Commission and key stakeholders such as ERA or Europe's Rail Joint Undertaking.

An example of this sort of self-coordinated follow-up activity is the proposed European network of Centres of Vocational Excellence for Railway Empowerment and Development (CoVERED) project proposal. This proposal was coordinated by the STAFFER partner CNAM and consists of 25 organisations from nine countries (BE, CH, CZ, DE, ES, FR, GR, IT, and PL), including companies from or representing the rail supply industry, railway operation and infrastructure management, educational institutions, other rail sector stakeholders, and vocational training providers. The CoVERED proposal was made to the ERASMUS program in June 2024 and be used to co-fund a 4-year project concentrating on railway vocational training.

FIGURE 4: THE COVERED PROPOSAL CONSORTIUM



The CoVERED consortium and the proposal work plan for developing a rail-related European ecosystem of skills development (comprising VET providers, employers, rail stakeholders, and research institutions) that is closely linked to national and regional communities of practices, is directly based upon STAFFER achievements and outcomes and foresees the continuation of working on key issues included in the long-term strategy, e.g. development of new educational and mobility programmes among the consortium partners, mechanisms to support cross-border mobility and exchange of learners or improving the attractiveness of rail as a career path and a place to learn.

If approved, the CoVERED project would guarantee a continuation of key outcomes and contents of the website and databases, repositories and other material developed during the STAFFER project.

However, while CoVERED also foresees – via an advisory board – the involvement of major rail stakeholders and EU institutions and measures of dissemination of results for the whole rail sector, its architecture is limited in terms of level of training programmes (its specific focus is on EQF levels 3 to 5), active partners and duration.

### **SCENARIO 3: RAILWAY SKILLS ALLIANCE**

Scenario 3 consists of creating an organisation to coordinate implementation and extension of the STAFFER Railway Skills Strategy action plan. This organisation, tentatively named the Railway Skills Alliance (RSA), would be a voluntary partnership of stakeholders interested in all aspects of railway workforce development. The RSA would be a permanent mechanism for monitoring, observing and collaboration on rail-related skills development and railway training at the European level.

Building upon STAFFER results and considering also the good practices of follow-up activities in other Blueprint projects, the following aspects are regarded as very important:

- Broad representation including direct links to all relevant rail stakeholders, institutions and organisations such as DG Move, ERA, Europe’s Rail, ERRAC, TRAN Committee, European Sectoral Social Dialogue Committee for railways, ERCI, EU railway organisations and trade unions.
- Open to all railway sector stakeholders.
- Relatively open and “learning” working structure by establishing horizontal as well as thematic working groups coordinated through the RSA and open to all interested stakeholders.
- Collaboration with other skill alliances and joining forces when it comes to joint interests (e.g. improving ESCO, fostering apprentices, skills shortage and international recruitment, certification of skills, etc.).

An initial plan for creating the RSA could be developed by interested STAFFER partners and other stakeholders at the European and national levels which could then be submitted as an application for funding under the Erasmus+ Budget line “*Alliances for Sectoral Cooperation on Skills (Implementing the ‘Blueprint’)*”.



## 8 CONCLUSIONS AND RECOMMENDATIONS

Absorbing only 2% of the total European transport energy use, railway transport is recognised as a major enabler for achieving the strategic European objective of smart, green and sustainable growth, and is expected to serve as the backbone of the whole European transport system.

Given the critical role of railways in the transition towards cleaner and smarter mobility and transport in Europe, a key motivation of the STAFFER project has been to address the sector's severe shortage of skilled workers. This skills shortage is a crucial challenge for developing the full potential of railways and overcoming barriers of efficiency, for example in relation to implementing the single European Rail Area: (a factor highlighted in the 2020 STAFFER project application). STAFFER was designed to develop strategies and actions for addressing this skills shortage including through education, upskilling and increasing railway sector attractiveness, for the entire railway sector from operators to suppliers.

STAFFER's ambition has, from the beginning, been to apply a holistic and comprehensive approach on skills which would limit the marked fragmentation of the sector (different domains of rail supply, train operation and infrastructure management; national systems, standards and rules, etc.). This was accomplished by developing a European dimension of skills formation, modernisation and adjustments of training and education programmes, as well as European solutions for employability, attractiveness and career opportunity challenges.

According to the STAFFER Work Plan, *“the ultimate result of STAFFER will be the establishment of a rail stakeholder partnership, the Sector Skill Alliance, to finally develop a holistic Blueprint strategy to recognise present and new skill needs suitably and timely, and substantially contribute to achieve the Single European Rail Area. Such a strategy will allow to overcome the fragmentation of the rail sector and help rail industry and VET institutions to design and realise concrete actions to satisfy skill needs, going beyond the project's lifetime and beyond the organisations involved in the Alliance.”*<sup>13</sup>

By these ambitious goals the STAFFER Erasmus+ Blueprint project has been a unique project initiative that broke new ground by bringing together 31 full partners and 15 associated organisations from 13 EU countries, representing infrastructure managers, railway operators and rail industry suppliers as well as vocational and educational institutions to assess railway sector talent and skills needs, and to develop programmes to address these needs.

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<sup>13</sup> STAFFER Project Application, p. 4.

Based on a comprehensive analysis of major trends, challenges and EU policies that will shape the European railway system, the STAFFER consortium identified key needs in terms of skills formation and upskilling and has started to develop exemplary measures, methods and pilot activities responding to main current and anticipated future challenges.

To reach the goals and targets of EU railway policies and shaping the single European railway area in a smart, efficient and sustainable way, there is the need for increased and joint efforts to address the labour and skills shortage, become more attractive, engage in re- and upskilling of workers and guarantee a qualified workforce across all rail-related occupational profiles and functions.

Considering the importance of sustaining the results achieved by the STAFFER consortium since the end of 2020, and to continue and extend multi-stakeholder collaboration in the rail sector, the consortium has agreed on a long-term sectoral skills strategy and action plan, that includes more than 50 specific activities related to the three main pillars/strategic objectives of (1) employability, attractiveness and diversity; (2) provision of state-of-the-art and future-proof rail-related education and training; and (3) developing European mindsets for the European railway area. To guarantee sustainability, the STAFFER consortium also suggests mechanisms, and operational structures to exploit outcomes and make them available for the whole rail sector beyond the STAFFER lifetime as outlined in more detail in section 6.2 above.

Given the strong need for addressing the railway sector's skills shortage in order to implement railway-related European policy objectives and implement strategic goals such as digitalisation of railways, expand services across borders and increase the efficiency of cross-border corridors, the ambition should be to **set up a European Railway Skills Alliance** as the major single hub of railway skills representing rail-related stakeholders - sector and business organisations and associations, rail clusters, VET and HEI, R&D institutes, social partners (e.g. employer and trade union organisations) - that works in close collaboration with European railway institutions such as the *European Union Agency for Railways (ERA)* or *Europe's Rail Joint Undertaking*.

In setting up a Railway Skills Alliance, STAFFER would be following the examples such as from the automotive sector or the microelectronics sector both of which successfully moved from 4-year Blueprint projects to setting up larger and more permanent structures of skill alliances at the European level.

The proposed European Railway Skills Alliance would pursue the following activities:

1. Establish a Rail Skills Academy: A single European platform and hub for documenting railway sector skills needs and best practices for training, employment development,



and educational programmes to meet these needs. Develop and implement joint training modules and courses at the transnational level in physical as well as virtual settings and e-learning formats like MOOCs and blended learning.

2. Implement and strengthen measures, joint activities and initiatives at the company, regional, national, and European levels to increase the attractiveness of the rail sector in general and in particular for young talents, women and other underrepresented groups. Promote, support and monitor the implementation of the STAFFER Ambassador programmes.
3. Rail Skills and Talent Observatory: Observation and monitoring of skills needs expressed by rail sector experts that partners to have a closer approach to anticipation of skills needs at national and European level. Support continued exchange and documentation of best practices for railway sector training, education, and employment development.
4. Rail Skills Intelligence: Monitor major trends affecting the rail sector to identify new skills needs. Develop and refine training, education, and employment development programmes to meet new and future skills needs. Update railway sector occupational profiles both in qualitative and quantitative terms.
5. Rail education and training database: Maintain and extend the databases of existing rail-related educational programmes and VET courses created in STAFFER and by other projects and partnerships.
6. Encourage more cross-border exchange and learning for students, apprentices and workers and facilitate cross-border mobility by establishing and mutual recognition of micro-credentials.
7. Providing a platform of promoting and providing practical support to companies for Erasmus-type learning and mobility partnerships in the railway sector
8. Dialogue and voice on shaping the European Railway Area: Strengthen the railway sector's voice towards the European Commission and other transnational organisations on railway sector skills needs and in the context monitoring and anticipating the skills impacts and needs of up- and reskilling in the context of railway digitalisation.
9. Endorse the European Pact for Skills and make railway sector related contributions to the new European Skills Agenda and the EU Action Plan on Talent and Skills.
10. Strengthen the links to the European network of railway regions and expand the collaboration on skills with rail clusters / communities of practice at all levels.

The Rail Skills Alliance would undertake these activities gradually based on the specific interests of members and stakeholders and depending on the composition and funding of the Alliance.

To move forward, an ad-hoc survey amongst STAFFER partners as well as other potential interested organisations and stakeholders may be conducted until the end of 2024. Depending on the results, an application may be elaborated for the 2025 Erasmus+ call for tenders (likely March 2025).

## ANNEX: STRUCTURED REPOSITORY OF SPECIFIC ACTIVITIES

Key fields of action <b>1</b>	<b>Improving attractiveness of rail and fostering diversity</b>
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Specific activity's code	Title	Brief description / objectives	Stake-holders involved <sup>14</sup>	STAFFER pilots (SP)/ Good practices (GP)	KPIs	Funding	Timeline (S-M-L) <sup>15</sup>
SpA 1.1	Formation of ambassador networks for company representation	An employer incentivises employees to represent the company as ambassadors at specific recruiting events (These could for example be alumni from certain educational institutions) or as digital ambassadors through company's website and social media channels.	E – ET – R - SP	SP: STAFFER Task 7.2 GP: Good practice example: Ambassador Program at SNCF; Trainfluencers at the pro rail alliance	Number of ambassadors Establishing network	Business	S
SpA 1.2	Cooperative Marketing between employers and education institutions at real life events such as job & educational fairs or school and company visits	Employers and education institutions participate in marketing events together to provide a clear image of the profession, the required skills for the profession and how the education leads to this profession.	E – ET – R	GP: alumni events, company visits and events, job fairs such as "Kontaktmesse Verkehr" (job fair)	Number of employers and institutions engaged	Business VET and HEI	S

<sup>14</sup> **P** Policy makers: Public sector bodies such as the European Commission, EU agencies, Member States, National and regional governments. **R** Rail sector related authorities and institutions at European level and their national and/or regional members such as ERA, Europe's Rail JU, ERCI, PRIME. **SP** Social Partners and Professional bodies: trade unions, business and employer associations in rail, Clusters, Academic associations. **ET** Education and training providers: Universities, higher education institutions, vocational education and training (VET) schools and organisations. **E** Employers: Large companies and SMEs, as well as organisations which requires professionals, such as rail related search institutes, knowledge providers and others.

<sup>15</sup> **S** Short-term (ongoing or starting in 2025); **M** Medium-Term (until 2028); **L** Long-term (beyond 2028)

Specific activity's code	Title	Brief description / objectives	Stake-holders involved <sup>14</sup>	STAFFER pilots (SP)/ Good practices (GP)	KPIs	Funding	Timeline (S-M-L) <sup>15</sup>
SpA 1.3	Cooperative marketing between HEIs, VETs and schools	Educational institutions combine resources to reach a larger audience such as visiting schools, using common marketing materials or resources through social media, advertisements, study pages etc.	ET – E - R	GP: VDV employer initiative use of common marketing materials for public transport operators and acting as a knowledge exchange	Number of institutions (HEIs or VETs) engaged	VET and HEI	S
SpA 1.4	Rewards and incentive programmes for employees committed to fostering inclusion and improving company culture	Employees who develop actions that are in line with desired company culture and inclusion should be incentivized or rewarded.	ET – E - R	GP: 4awards4inclusion at Alstom. GP: VDV Employer initiative for the best bus driver	Number of companies engaged Number of employees engaged	Business	S
SpA 1.5	Engaging with influencers outside of the railway bubble	Engaging with influencers outside of the railway bubble may help to address target groups, which may not be primarily engaged with the railway sector. This includes in-depth looks into the company and trying out certain professions.	ET – E - R	GP: Video by Tom Scott on e-Highway project GP: Youtuber trying out conducting a subway GP: Children's tv show "Die Maus" showing how an ICE the Velaro platform is built	Number of videos produced	Business	S-M
SpA 1.6	Mentoring programme for female leaders	With a focus on gender diversity the Mentoring Programme for female engineers in railways was kicked off. Mentoring tandems are built across borders and come from the rail sector and related academic institutes.	E – ET	SP: Pilot activity in Task 6.7 with involvement of CESI, FS, ÖBB, ... (to be completed)	Number of implemented programmes Number of companies engaged Number of HEIs engaged Number of employees engaged	Business	S-M
SpA 1.7	Building European Mindsets	Development and dissemination of promotion material (testimonials, video-clips, etc.) that highlight motivation of railway workers in cross-border railways with the aim to develop better understanding	E - R	GP: Pilot video in WP6, Task 6.7	Number of promotional materials produced	EU Commission Business	L

Specific activity's code	Title	Brief description / objectives	Stake-holders involved <sup>14</sup>	STAFFER pilots (SP)/ Good practices (GP)	KPIs	Funding	Timeline (S-M-L) <sup>15</sup>
		and raise the interest for working in cross-border railways.					
SpA 1.8	Improving attractiveness of rail / fostering diversity	Work on career development paths focused on diversity (gender, youth ...). Fostering learning culture in the rail industry	E – ET – R – SP	Good practices at company level documented in Deliverable 7.	Percentage of women employed in the railway sector Percentage of workers from disadvantaged groups employed in the railway sector	EU Commission DG EMPL	M
SpA 1.9	Addressing labour shortage and attracting talent: Dissemination of good practices and innovative approaches, including of railway related information provided at schools and in school curricula.	Follow-up activity mirroring the EU Action plan to tackle labour and skills shortage from the rail sector perspective involving the European Sectoral Social Dialogue Committee for Railways.	SP – E – P – R	SP: WP 6 and WP 7.1 Good practice: Women in Rail Autonomous Agreement between CER and ETF	Number of good practices identified	EU Commission DG EMPL	S - M
SpA 1.10	Skills and Labour Forum “Transport and mobility” Addressing labour and skills shortages and challenges of attractiveness in railways and other transport modes	Key challenges related to skills, labour shortage and attractiveness of jobs and working conditions are quite similar in all transport and mobility sectors, e.g. road, urban public transport, automotive, maritime shipping, inland waterways, aviation as well as logistics. There are also joint interests such as promoting diversity, female employment and developing new forms of training, including apprenticeship training. Based on this a joint Forum that may include mixed working groups and joint project or policy initiatives	E – ET – SP – R	This measure is building on exchange between STAFFER and other transport/mobility related blueprints (DRIVES, Mates, SkillSea) as well as in the context of exchange with Sectoral Social Dialogue Committees in road and urban public transport.	Number of joint initiatives and collaborative activities	EU Commission DG Move	S – M – L

Specific activity's code	Title	Brief description / objectives	Stake-holders involved <sup>14</sup>	STAFFER pilots (SP)/ Good practices (GP)	KPIs	Funding	Timeline (S-M-L) <sup>15</sup>
		would strengthen the voice of transport and mobility stakeholders.					
SpA 1.11	Promotion and supporting the implementation of the Social Partners WIR Agreement	Based on the CER – ETF Women in Rail Agreement that was signed (2021) the implementation should be supported in particular by exchanging good practices and the promotion of the agreement in more companies	E – SP – R – P	WIR Agreement Recommendations of the (ongoing) evaluation of the agreement	Number of companies outside the CER (e.g. rail suppliers) applying the agreement	EU sectoral social dialogue funding	S - M
SpA 1.12	Develop rail-specific contribution to the EU initiative and action plan on skills shortage and talent platforms (cross-border recruitment)	Based on company good practices, a joint position of the rail sector (e.g. following the format of the STAFFER policy recommendations) should address challenges and needs of the sector in relation to skills and talent shortages and how to address them	E – SP – R – P	STAFFER policy recommendations	Number of organisations participating and supporting the rail-sector contribution or joint declaration	Own	S - M
SpA 1.13	Dialogue Forum with trade unions	Exchange and discuss key STAFFER outcomes in relation to attractiveness and diversity in a high-level conference with other transport Blueprints / Skills Alliance, including also relevant trade union organisations	SP – E – P	Railway sectoral social dialogue Committee projects such as EDA Rail (Employability in the light of Digitalisation in Railways”) as well as joint projects at national level	Number of participating organisations	EU Commission	S

Key fields of action  <b style="font-size: 2em;">2</b>	<b>Cooperation between the sector and VET/HEI at EU, national and regional level</b>
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Specific activity's code	Title	Brief description / objectives	Stake-holders involved	STAFFER pilots (SP)/ Good practices (GP)	KPIs	Funding	Timeline (S-M-L)
SpA 2.1	Skill intelligence: Identification of future skills needs and job roles	Updating new and emerging skills and job roles; collaborate with national good practice in relation to skills intelligence gathering; work with research think tanks and data collection agencies (e.g. Cedefop) focused on skills mapping; utilise existing rail employer groups established at national and regional level together with national centres of expertise to undertake more detailed consultation on changing skill requirements.	ET – E – SP – R – Oth	SP: STAFFER Tasks 1 and 2 GP: Drives Blueprint	Number and relevance of new skills and job roles defined	Erasmus+ KA2	M – L
SpA 2.2	Harmonise occupational profiles at EU level by updating ESCO profiles	Updating existing rail related job/occupational profiles and jointly define new profiles in collaboration with ESCO and others (Cedefop).	ET – E – SP – R – Oth	SP: STAFFER Tasks 1 and 2	Number of ESCO profiles updated and new profiles defined	EU Commission, ESCO	S – M
SpA 2.3	Creating a database and network rail related VET schools / institutes engaged in railway training	This activity requires close cooperation with the UIC, which has already set up such a platform, which is currently not fed with data collected by STAFFER.	ET – E	SP: STAFFER Task 2.2 GP: UIC Talent Expertise Development Platform	Number of VET schools involved in the network	Erasmus+ KA2	S – M
SpA 2.4	Linking communities of practice and excellence in VET: Intensifying, extending and deepening	In the light of common challenges and needs the rail sector is facing, there is a need to intensify cooperation between the rail sector and the VET system at EU, national and regional level and rail related research and skills intelligence.	R – ET – E – SP	GP: Communities of practices of vocational excellence GP: Rail cluster practices CoVERED application delivered in May 2024 in collaboration with (some) STAFFER partners and	Number of involved partners Concrete outcomes and results achieved in terms of building networks	Erasmus+ KA2 – Centres of Vocational Excellence	S – M

Specific activity's code	Title	Brief description / objectives	Stake-holders involved	STAFFER pilots (SP)/ Good practices (GP)	KPIs	Funding	Timeline (S-M-L)
	cooperation between national and regional railway eco-systems			additional stakeholders in 9 European countries	and European level VET and skills development		
SpA 2.5	Rail sector Awareness session in secondary and high schools	Increase number of applicants in VET /HEI programmes. Increase number of pertinent applications to the Rail job offers.	R – ET – E – SP	Communities of practices of vocational excellence Rail cluster practices	Increased number of applications to rail job offers Increased number of applications for railway courses offered by VET providers and HEIs	Business	S – M
SpA 2.6	Develop and integrate rail specific contributions in primary and secondary school curricula	In order to make the rail sector more visible as an interesting sector and place to work, rail-specific contents should be suggested as curricula in subjects such as informatics, physics or geography.	ET – R – P – E	Communities of practices of vocational excellence Rail cluster practices	Increased number of applications to rail job offers Increased number of applications for railway courses offered by VETs and HEIs	VET and HEI	S – M
SpA 2.7	Develop skills and talent pillar in regional rail clusters	Increase the collaboration of regional railway clusters with VET providers and Higher Education Institutions to promote the identification and development of new skills.	R – SP – ET – P – E	GP: Communities of practices of vocational excellence GP: Rail cluster practices CoVERED application delivered in May 2024 in collaboration with (some) STAFFER partners and additional stakeholders in 9 European countries	Concrete outcomes and results achieved in terms of building networks and regional level VET and skills development	Erasmus+ KA2 – Centres of Vocational Excellence	S – M

<b>Key fields of action</b>  <b>3</b>	<b>New education and training courses and programmes at different EQF levels</b>
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Specific activity's code	Specific activity	Brief description / objectives	Stake-holders involved	STAFFER pilots (SP)/ Good practices (GP)	KPIs	Funding	Timeline (S-M-L)
SpA 3.1	Database of rail related education programmes on STAFFER website	Consolidate, manage, and update all information associated with rail education programmes at different levels on a single large platform. Main target group are students or apprentices in HEI. A unique portal, linked to each of the websites of the institutions that provide the different programmes.	ET – E – R	SP: A structure and web prototype of the database developed by STAFFER Task 6.2 SP: Results of STAFFER task 4.1	Number of programmes and courses included in the database	EU Commission, ERA or other	S
SpA 3.2	Identification and highlighting (STAFFER Websites, bi-annual rail skills event) of best practices in railway education and training programmes	Benchmarking of existing programmes on the basis of a common methodology and identification of best practices education and training	E – ET – SP – R	SP: Based on outcomes of STAFFER task 4.3	Number of best practices and involved organisations	EU Commission, ERA or other	S
SpA 3.3	New training programmes / content development for EQF level 3-5	Development and implementation of new courses/modules taking into account new skill needs. Target groups: learners at EQF level 3-5 Occupations / topics: train driver and rail specific themes for different occupations.	ET	STAFFER pilot experience in Task 6.5	Number of new courses/modules implemented per occupational profile/topic	VETs Erasmus+ KA2 – Centres of Vocational Excellence	S-M



Specific activity's code	Specific activity	Brief description / objectives	Stake-holders involved	STAFFER pilots (SP)/ Good practices (GP)	KPIs	Funding	Timeline (S-M-L)
SpA 3.4	New VET contents and programmes at EQF level 6-8	<p>Development and implementation of new courses/modules considering new skill needs for the following job profiles identified by STAFFER:</p> <ul style="list-style-type: none"> <li>• Railway systems engineer</li> <li>• Rail traffic / operations engineer</li> <li>• Railway transport engineer</li> </ul> <p>Target groups: students at EQF level 6-8.</p> <p>Railway companies interested in offering internships to students and possibly hiring them.</p>	ET - E	SP: STAFFER pilot experience in Task 6.6	Number of new courses/modules implemented per job profile/topic	HEIs Business	S - M
SpA 3.5	New double, multiple or joint degree programmes	Development and implementation of new degree programmes in English or other languages run jointly by STAFFER partner universities and others considering new skill needs identified by STAFFER with the aim of providing students with a systemic view of European rail transport	ET – E – R	GP: German speaking Master in European Railway Systems run jointly by 3 Universities	Number of implemented joint degrees in the railway sector considering new skill needs identified by STAFFER	Erasmus+ Business	M
SpA 3.6	Summer school on “The European Railway System”	<p>Provide university students from different backgrounds with a systemic view of European rail transport and create passion for the sector.</p> <p>The course comprises lectures and seminars held by academics, representatives of institutions (ERA) and railway companies on various topics (such as EU regulatory framework, interoperability, ERTMS/ETCS, sustainable powertrains, green mobility, safety management) and visits to traffic control rooms, maintenance</p>	ET – R – E	<p>SP. STAFFER Task 6.6</p> <p>SP: Summer school on “The European Railway System” organized by UNIROMA1 from 10 to 19 July 2024 in Rome</p>	<p>Number of students involved in the summer school (absolute and per country)</p> <p>Number of universities involved in the summer school (absolute and per country)</p>	Erasmus+ Business	S - M

Specific activity's code	Specific activity	Brief description / objectives	Stake-holders involved	STAFFER pilots (SP)/ Good practices (GP)	KPIs	Funding	Timeline (S-M-L)
		workshops, laboratories, construction sites, railway museums, etc.					
SpA 3.7	Establishment of multi-stakeholder working groups addressing the skills building process <sup>16</sup>	Creation of working groups at EU, national and regional level that can continue the work of identifying the training needs of the railway sector and translating them into training programmes. These working groups (consisting of VET/HEIs, Rail companies and operators, rail institutions, rail and transport organizations) should exchange best practices and data on skills gaps and skills needs in the rail sector and should meet periodically (at least twice a year).	ET – E – R – SP	SP: STAFFER WP 4 SP/GP: Pilot practices of networking and communication in WP 6, Task 6.7	Number of involved organisations and thematic working groups Publication of a report and recommendations	Participating institutions Erasmus+	S – M
SpA 3.8	Exchange, collaboration and development of harmonised concepts for ETCS training	As research and consultation as well as a pilot activity in the context of STAFFER has shown, currently ETCS training is very fragmented and divers: Each railway company develops its own training material and curricula. At the same time, the share of training contents that is defined by EU level rules and standards is increasing. Therefore, for cost-efficiency as well as conversion, transnational collaboration aiming at the development of harmonised contents and modules of ETCS training would provide concrete added-value.	E – ET – R	GP: STAFFER Pilot WP6, task 6.7	Number of harmonised training modules	ERA, EU Commission Rail sector	S – M

<sup>16</sup> Also, a specific measure in the DRIVES Blueprint Long Term Strategy and Action Plan

Specific activity's code	Specific activity	Brief description / objectives	Stake-holders involved	STAFFER pilots (SP)/ Good practices (GP)	KPIs	Funding	Timeline (S-M-L)
SpA 3.9	Developing harmonised modules and training offers on interoperability for different occupational profiles	<p>The number of railway staff of different occupational profiles (e.g. train drivers, traffic control, cross-border infrastructure planning, management and maintenance) is growing and is expected to grow further in the future.</p> <p>Against this, the development of European-wide modules on those skills, knowledges and competences that are based on already harmonised European rule and/or that require cross-border cooperation would provide an added value from the EU perspective as well as the perspective of individual companies.</p>	E – ET – SP – R	STAFFER WP2 and WP4 outcomes and ideas on concrete measures	Number of harmonised training modules	ERA, EU Commission	S – M
SpA 3.10	Developing training modules and webinars new emerging topics in European railways	Based on already existing company practices of developing training material on new emerging topics such as Green Skills in railways, Building Information Modeling (BIM), artificial intelligence, cybersecurity, safety and resilience, etc. such contents should be made available for a broader community at EU level.	E – ET	GP: Pilots developed in WP6, Task 6.7	Number of training material and courses	Erasmus+ KA2	

Specific activity's code	Title / Topic	Brief description / objectives	Stakeholders involved	STAFFER pilots (SP)/ Good practices (GP)	KPIs	Funding	Timeline (S-M-L)
SpA 4.1	Long-term Rail BIP (Blended Intensive Programme)	Objectives: To learn about the different railway realities throughout Europe. To encourage a European scale thinking about the development of railways. To promote the exchange of experiences in a multicultural and multidisciplinary environment. To promote technological innovation.	ET – E – R	SP: STAFFER Task 6.2 SP: Pilot RAIL BIP and Summer Schools experience (short-term)	Number of students involved in the summer school (absolute and per country) Number of universities involved in the summer school (absolute and per country) Number of railway companies involved in the summer school (absolute and per country)	Erasmus+ Business	S-M
SpA 4.2	<i>Rail Apprentices Mobility Programme:</i> Guidance and practical support for companies	Objectives: Providing guidance and practical support for companies and apprentices for gaining learning experience and knowledge in another country.	E – ET – SP	SP: Concepts and guidance material developed in STAFFER Task 6.3 SP: Pilot experience of apprenticeship exchange between DB and SNCF (annual) as well as DB and CFL (2024)	Number of railway companies considering engagement in apprentice mobility projects	Erasmus+ KA1	S-M
SpA 4.3	<i>Rail Apprentices Mobility Programme:</i> Establishing a platform and pool for interested rail companies, VET institutions	Developing a platform providing practical guidance and information for companies in the rail sector as well as VET institutions that are interested in providing learning mobility offers to apprentices and/or trainees and dual students. The platform may also facilitate the development of mobility project ideas and programmes and joint	E – ET – SP – R	GP: EAfA members from the railway sector (SNCF, DB, SNCB, ÖBB, UIC. AERRL)	Number of railway companies joining EAfA	Erasmus+ Business	S-M



Specific activity's code	Title / Topic	Brief description / objectives	Stakeholders involved	STAFFER pilots (SP)/ Good practices (GP)	KPIs	Funding	Timeline (S-M-L)
		Erasmus+ applications for mobility projects.					
SpA 4.4	Database of rail related internships on STAFFER website or other means	Consolidate, manage, and update all information associated with Erasmus+ traineeship opportunities offered to students currently enrolled in higher education institutions (Bachelor, Master students and PhD candidates) and to recent graduates by rail operators and suppliers on a single large platform. Materialise a unique portal, linked to each of the websites of the international or Erasmus+ office of rai higher education institutions and each of the website of rail operators and suppliers offering internship opportunities.	ET – E – R	SP: STAFFER WP 6.2 and 6.3 GP: Other Blueprints' skills strategies <a href="https://erasmus-plus.ec.europa.eu/opportunities/opportunities-for-individuals/students/traineeships-abroad-for-students">https://erasmus-plus.ec.europa.eu/opportunities/opportunities-for-individuals/students/traineeships-abroad-for-students</a>	Number of internships reported on the website	Erasmus+ KA2 – Centres of Vocational Excellence Business	S-M
SpA 4.5	Establishment of bilateral Erasmus agreements between all STAFFER partner universities and any other European universities wishing to join	The realisation of Erasmus bilateral agreements is the necessary precondition for a series of joint training programme and mobility initiatives, such as the simple Erasmus student mobility, new double, multiple or joint degree programmes, the Long-term Rail BIP (Blended Intensive Programme).	ET	SP: STAFFER WP6 GP: Other blueprints' skills strategies	Number of involved universities	HEIs	S
SpA 4.6	STAFFER Website: "Virtual railway academy"	Creation of a web-based catalogue of physical and online training offers for staff in rail in English or other languages.	E – R – ET – SP	SP: STAFFER tasks 2.1 and 2.2 an GP: Virtual academies in other sectors, e.g. urban public transport, aviation, automotive	Number of courses and training offers	HEIs UIC Erasmus+ KA2	S-M

Specific activity's code	Title / Topic	Brief description / objectives	Stakeholders involved	STAFFER pilots (SP)/ Good practices (GP)	KPIs	Funding	Timeline (S-M-L)
SpA 4.7	Create a platform for gathering good practice and promotion of apprenticeship and learners' mobility in the rail sector	Developing a platform to collect good practices from other sectors and pool rail good practices regarding the added value of apprenticeship as such and of apprenticeship mobility to promote the attractiveness of the railway as a career path.	E – ET – R - SP	SP: STAFFER WP6.3 SP: Pilot experience of apprenticeship exchange between DB and SNCF (annual) as well as DB and CFL (2024)	Number of good practices reported on the platform	Erasmus+ KA1	S-M
SpA 4.8	Rail sector Apprenticeship Ambassador Programme promoting learning mobility	Establishing a network made up of current and former apprentices to promote learning mobility opportunities for rail apprentices.	E – ET – R - SP	SP: STAFFER Task 6.3 GP: Good practice example: Ambassador Program at SNCF; #100AmbassadorxFS at FS	Number of ambassadors Establishing network	Business	S - M

<b>Key fields of action</b>  <b>5</b>	<b>Mobility and exchange in cross-border railways and communication</b>
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Specific activity's code	Specific activity	Brief description / objectives	Stakeholders involved	STAFFER pilots (SP)/ Good practices (GP)	KPIs	Funding	Timeline (S-M-L)
SpA 5.1	Expert and practitioner Focus Group Cross-border communication and language	EU level exchange and collaboration with the longer term vision to develop occupational profiles related to cross-border railway operation and interoperability	E – R – ET – SP	SP: STAFFER task 4.4 GP: Pilots in WP6, Task 6.7	Involved members and countries	ERA, Europe's Rail JU EU Commission	S – M
SpA 5.2	ETCS learning programme for "Rail Newcomers" and ETCS experts' network	Regular exchange on skills and training needs on ETCS, developing harmonised learning modules, carried out activities of further training and exchange of ETCS experts at company level and beyond	E – R – ET	SP: Pilot project developed in STAFFER Task 6.4	Number of students involved in the summer school (absolute and per country) Number of universities involved in the summer school (absolute and per country) Number of railway companies involved in the summer school (absolute and per country)	Erasmus+	S
SpA 5.3	Modernising the occupational profile and skillset and defining common skills needs and knowledges for train drivers	Based on a comprehensive analysis of current training programmes and curricula of highly relevant occupational profiles (e.g. train drivers, traffic controllers) the vision of a nucleus of common European contents and quality standards might be developed in a pilot activity.	ET – R	SP: STAFFER WP 4 and 6 DB FutureLab and similar initiatives at other companies	Number of updated occupational profiles Number of railway companies involved in updating the skills of train drivers	ERA Erasmus+ KA2	S - M

Specific activity's code	Specific activity	Brief description / objectives	Stakeholders involved	STAFFER pilots (SP)/ Good practices (GP)	KPIs	Funding	Timeline (S-M-L)
SpA 5.4	Development of online course modules and material	Based on the STAFFER pilot experience of developing a MOOC on Building Information Modelling (BIM) in railways or the development a multi-lingual online course on brake functioning	E – ET – R	SP: STAFFER Task 6.7	Number of implemented courses/modules/teaching materials (absolute and per topic)	Erasmus+ Business	S-M
SpA 5.5	Establishing a competence centre on railway language (training)	The exchange between railway undertakings on experiences, challenges and needs in relation to foreign language training for staff involved in cross-border railways needs to be continued and extended due to the strong interest of the involved companies in this topic. There is a need to exchange on good practices, discuss and develop joint opinions on digital solutions and develop common references (e.g. glossaries) and standards for foreign language training.	E – ET – SP	STAFFER pilot activity on language training in WP6, Task 6.7	Number of companies involved Development of a multi-lingual glossary on railway-specific vocabulary that cross-border operational railway staff uses in different situations	EU Commission, ERA, Europe' Rail JU Business	S-M-L
SpA 5.6	Train-the trainer exchange and joint seminars on cross-border railway skills needs	Addressing different staff groups and occupational profiles as well as train-the-trainer perspectives, also through extensive use of the possibilities offered by digital technology, such as online seminars, video lessons, simulators and other digital tools.	E – ET – R – SP	SP: STAFFER WP 2, 3 and task 4.4	Number of trainers from different organisations and countries involved	Erasmus+ KA1	S – M – L
SpA 5.7	"Rail Interoperable Staff Erasmus": Creating opportunities for staff exchange, job shadowing and other format for interoperable staff	Develop international staff exchange and job shadowing programmes between different railway companies and 'interoperable' categories of workers.	E – P – SP – VET – R	SP: STAFFER Task 6.3 GP: Erasmus+ Training opportunities for staff working in HEIs and VET providers	Number of companies involved Number of employee categories involved Number of workers involved	Business	S-M-L



Specific activity's code	Specific activity	Brief description / objectives	Stakeholders involved	STAFFER pilots (SP)/ Good practices (GP)	KPIs	Funding	Timeline (S-M-L)
	(traffic control, train drivers, etc.)						

<b>Key fields of action</b>  <b>6</b>	<b>Sustainability, governance, visibility and voice of rail in Europe</b>
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Specific activity's code	Specific activity	Brief description / objectives	Stakeholders involved	STAFFER pilots (SP)/ Good practices (GP)	KPIs	Funding	Timeline (S-M-L)
SpA 6.1	Sustainability and gaining stakeholder support	Supporting the implementation the long-term strategy and ensuring sustainable overall support of key stakeholders and policymakers <sup>17</sup>	R – SP – P – ET - E	SP: WP 7.4 GP: Drives Blueprint	Number of partners / representativity of the whole rail sector	Erasmus+ (Alliances for Innovation)	S
SpA 6.2	Create a European platform for Rail skills	Act as a platform for Rail Skills Agenda and stimulate its continuous development as well as regular updates in the light of new needs.	R – SP – P – ET - E	SP: WP 7.4 GP: Drives, Mates, Construction and other Blueprints	Number of partners / representativity of the whole rail sector	Erasmus+ and EU rail sector stakeholders	S
SpA 6.3	Set-up strong links of skill intelligence <sup>18</sup>	Create links between rail businesses and VET providers for a widespread sharing of results of intelligence update outcomes.	R – SP – P – ET - E	SP: WP 7.4 GP: Drives, Mates, Construction and other	Number of partners / representativity of the whole rail sector	Erasmus+ (Alliances for Innovation)	S
SpA 6.4	Proposal of a Bi-annual high-level railway HR and skills conference	Bi-annual meeting focusing on new emerging trends and skills needs in railways from different perspectives: Europeanisation, cross-border skills and talent needs, good practices, apprenticeship development and attractiveness of the sector for talent.  The event should be supported by a bi-annual large survey of HR Directors.	SP – E – R – P – ET	GP: biennial Human and Organisational Factors (HOF) Conference, organised by ERA: <a href="https://www.era.europa.eu/content/hof-risk-management-conference-2024">https://www.era.europa.eu/content/hof-risk-management-conference-2024</a>	Number of participants in bi-annual survey and event	EU Commission Business	S

<sup>17</sup> This activity is suggested by in the Drives Long-term skills strategy

<sup>18</sup> This activity is suggested by other blueprints' Long-term skills strategy and roadmap

Specific activity's code	Specific activity	Brief description / objectives	Stakeholders involved	STAFFER pilots (SP)/ Good practices (GP)	KPIs	Funding	Timeline (S-M-L)
SpA 6.5	Providing a platform and forum for informing about needs and creating shared visions	Build a common dialogue platform to inform companies and VET providers about the different needs and create a common vision for the future.	R – SP – P – ET - E	GP: Drives, Mates, Construction and other Blueprints	Number of partners / representativity of the whole rail sector	Erasmus+ KA2 Business, VET, HEI	S
SpA 6.6	Rail-specific commitments and contributions to EU initiatives on skills, talent and sustainable employment, including upskilling and international recruitment	Develop a rail-specific contribution to the EU Pact for Skills and EU Action plan to tackle labour and skills shortages.	R – SP – P – ET - E	SP: STAFFER Task 6.7	Number of companies and other stakeholders joining the Pact for Skills	EU Commission Pact for Skills	S
SpA 6.7	Conducting feasibility study and stakeholder consultation / survey on added value and interest in joining European Railway Skills Alliance	Draw up a feasibility study and carry out a survey for addressing rail stakeholders and actors outside STAFFER to gather their opinion on the added value a European Railway Skills Alliance could have and their possible interest in joining it.	R – ET - E	GP: Practices in 14 other sectoral ecosystems and Skill Alliances	Number and representativeness of survey participants	STAFFER Partners	S
SpA 6.8	Setting up a European Railway Skills Alliance	Following the examples of other sectoral blueprints (e.g. automotive, construction) but also EU rail-related initiatives such as the European Railway Clusters Initiative (ERCI). Objectives: (Virtual) forum of exchange and networking (annual or bi-annual conference, thematic working/focus groups); Provision of rail related skill intelligence and good practice examples.	R – SP – ET – E - P	GP: Practices in 14 other sectoral ecosystems and Skill Alliances	Number of partners / representativity of the whole rail sector	Erasmus+ Funding Programme “Alliances for Innovation” Lot 2: “Alliances for Sectoral Cooperation on Skills (Implementing the ‘Blueprint’)”	S - M