

FOSTER RAIL

Future of Surface Transport Research Rail

Coordination and Support Action

Grant Agreement No 605734

Date of Annex I against which the assessment will be made: 23-05-2013

Deliverable D5.1

Working procedures between ERRAC groups and SHIFT²RAIL bodies

WP	5	Fostering innovation and partnerships: ERRAC and SHIFT ² RAIL
Task	5.1	ERRAC/SHIFT ² RAIL interfaces

Dissemination level ¹	PU
Nature ²	R

Due delivery date	M3
Actual delivery date	M18

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Document Version	Date	Author(s)
Final	October 2013	UNIFE

¹ Dissemination level: **PU** = Public, **PP** = Restricted to other programme participants (including the JU), **RE** = Restricted to a group specified by the consortium (including the JU), **CO** = Confidential, only for members of the consortium (including the JU)

² Nature of the deliverable: **R** = Report, **P** = Prototype, **D** = Demonstrator, **O** = Other

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1. Executive Summary

FOSTER-RAIL is a EU coordination and support action project under the 7th Framework Programme designated to support ERRAC (European Rail Research Advisory Council) in defining research needs for their strategies and programmes in order to realise the objectives of the Europe 2020 strategy.

The Foster Rail Work Package 5 (WP5) “Fostering innovation and partnerships: ERRAC and SHIFT²RAIL” relies on the implementation of the proposed joint undertaking for research, development and innovation for rail (under the acronym: SHIFT²RAIL). One objective of the WP5 was to propose the necessary strategic and operational links between ERRAC and the SHIFT²RAIL initiative and identify the coordination requirements.

The purpose of this deliverable is to describe the activities carried out within WP5 associated to the task 5.1 “ERRAC/ SHIFT²RAIL interfaces”. The main objectives of this task were:

- To describe the working procedures envisaged between ERRAC groups and SHIFT²RAIL;
- To provide support for the setting up of the SHIFT²RAIL Joint Undertaking (JU).

At the time of the Foster Rail proposal establishment, it was foreseen that SHIFT²RAIL would have been structured in a short time, allowing ERRAC with its newly created “ERRAC Strategy Board” to match and provide direct support in the shaping of the SHIFT²RAIL structure.

However the SHIFT²RAIL Regulation adopted on July 2014 does not foresee the same number of committees as the ones identified initially in the Foster Rail proposal. And it provides a clear role to ERRAC directly in the operation phase rather than in the setting up phase – where the European Commission remains responsible.

In agreement with the European Commission, the task 5.1 and this deliverable have ended without the creation of specific official common working procedures between the SHIFT²RAIL JU and ERRAC. Nevertheless some useful work has been achieved within the task 5.1 in order to provide within ERRAC the right exchange of information on SHIFT²RAIL.

First ERRAC has officially endorsed SHIFT²RAIL on 15 November 2013. Then the ERRAC Strategy Board has been informed about the progress of SHIFT²RAIL. Two ERRAC Permanent Advisory Groups (Academia and Member States) have been setting up and informed about SHIFT²RAIL status. Last but not least of one single pre-requirement group was setting up and integrated within the preparatory phase of SHIFT²RAIL in order to try to boost the inputs from the interested parties.

As working procedure the participants of the task 5.1 of Foster Rail discussed a possible setup of the system integration activity as well as the role for the pre-requirement groups as reported in the deliverable D5.2 *Report from of “pre-requirements and implementation groups”*.

2. ERRAC – SHIFT²RAIL interfaces

When the Foster Rail proposal was submitted to the European Commission, it was foreseen that SHIFT²RAIL would have been structured in a short time, allowing ERRAC with its newly created “ERRAC Strategy Board” (following the implementation of the ERRAC Terms of Reference in April 2013) to match and provide direct support in the shaping of the SHIFT²RAIL structure.

The SHIFT²RAIL Regulation adopted on July 2014 does not foresee the same number of committees as the ones identified initially in the Foster Rail proposal and it provides a clear role to ERRAC directly in the operation phase rather than in the setting up phase – where the European Commission remain responsible.

In agreement with the European Commission this task and deliverable will end without the creation of specific official common working procedures between the SHIFT²RAIL Joint Undertaking and ERRAC. But some useful work has been nevertheless achieved in order to provide within ERRAC the right exchange of information on SHIFT²RAIL with the following ERRAC working group:

- ERRAC Strategy Board;
- Permanent Academic Advisory Group of ERRAC;
- Permanent Member States Advisory Group of ERRAC;
- Pre-requirements group for S2R.

This deliverable describes the interaction with SHIFT²RAIL since the beginning of the project.

A. Establishing of SHIFT²RAIL information exchange within the ERRAC Strategy Board.

The ERRAC Strategy Board has adopted in their agenda a fixed point of discussion on SHIFT²RAIL:

- Kick-Off meeting on 17.07.2014 in Brussels: During this meeting, it was agreed that the ERRAC Strategic Board shall provide a clear and official position on the SHIFT²RAIL initiative.
- Meeting on 16.07.2014 in Brussels: During this meeting, the ERRAC Strategic Board officially endorsed SHIFT²RAIL → ERRAC position paper on SHIFT²RAIL, please refer to the part 2.2.
- Meeting on 28.01.2014 in Brussels: The status of SHIFT²RAIL was discussed.
- Meeting on 10.04.2014 in Paris: The status of SHIFT²RAIL was discussed.
- Meeting on 16.06.2014 in Brussels: EC DG Move made a presentation of the SHIFT²RAIL on the SHIFT²RAIL Draft Master Plan
- Meeting on 24.09.14 in Brussels: The status of SHIFT²RAIL was discussed.

B. Endorsement of SHIFT²RAIL by ERRAC

The ERRAC strategy board first and then the ERRAC Plenary endorsed SHIFT²RAIL with the following text on 15 November 2013:

“

PREAMBULE

To enable the Railway Sector to meet the challenges set out in the White Paper the European Commission must provide balanced support and funding that is comparable to other transport modes. ERRAC believes that to enable the whole railway industry to support and endorse SHIFT²RAIL it is essential that the European Commission recognises that the rail sector, including SHIFT²RAIL, must be fully funded.

ERRAC Opinion on SHIFT²RAIL

At a time when Europe is mobilising to provide sustainable solutions to the current economic crisis, research and innovation are key instruments to enable Europe and its companies to retain their competitiveness and

added value for the future.

In March 2011, the European Commission's White Paper on Transport, set out a number of challenges for the future European transport system and proposed some ambitious targets for the railway sector.

Since 2001, ERRAC, as a European Technical Platform (ETP) has been helping to revitalise the European rail sector, identifying areas where development could make it more competitive, fostering increased innovation and guiding research efforts at European level. Through its continuous efforts, ERRAC has become a recognised interface for rail research and innovation with the European Commission. Today, gathering the expertise of all the main stakeholders involved in rail research and innovation at European level, ERRAC is the principle driving force for rail sector research and innovation proposals and a unique platform for a broad and transparent dialogue promoting the essential system approach to rail development.

In its vision document, Rail Route 2050, ERRAC explicitly called for the European Commission, via Horizon 2020, to "allow a full set of instruments, from small to collaborative projects to large structure technical demonstration initiatives, to allow different stakeholders to perform the specific research required to achieve the Rail Route 2050 targets"³.

The proposed SHIFT²RAIL joint undertaking will be the first such initiative in the sector at European level to seek focused research and innovation (R&I) and market-driven solutions by accelerating the integration of new and advanced technologies into innovative rail product solutions⁴.

Firstly, as the first large-scale research initiative for the competitiveness of the EU rail sector, SHIFT²RAIL has the objective, operating within a well-balanced framework of supporting the EU rail sector in playing a leadership role at a global level.

SHIFT²RAIL must meet the challenges of an ever-changing set of EU mobility needs. With an ambitious large-scale and multiannual technical research programme, the SHIFT²RAIL initiative must also be able to support the implementation of the objectives of the Transport White Paper (2011), the realisation of the Single European Railway Area (SERA)⁵ and the vision set out in RAIL ROUTE 2050.

SHIFT²RAIL's promoters today include a significant proportion of the manufacturers and suppliers of rail system products, sub-suppliers, infrastructure managers, railway undertakings, as well as universities and research centres. This broad range of promoters brings the necessary expertise and experience needed to deliver the SHIFT²RAIL technical programme and demonstrates that there is European-level interest on this initiative.

ERRAC is supportive of the initiative as it is a commitment to strengthening the attractiveness of the European rail system to end customers of both freight and passenger services, especially through a fundamental step change in technological and technical developments and the customer service experience. In parallel, SHIFT²RAIL enhances the ecological and economic benefits of rail transportation and will significantly help to reach the environmental targets of the EU and therefore becoming a showcase for worldwide export opportunities and worldwide environmental benefits. In order to ensure a complete coherence of the strategic research and innovation developments within the European rail sector at the most senior level, ERRAC has agreed that its Strategic Board is the Strategic Advisory Council for the SHIFT²RAIL initiative. This will not only ensure a strong interface between the relevant stakeholders but also a close coordination between the SHIFT²RAIL Joint Undertaking and the open calls programme that it is anticipated that the European Commission will manage and continue to grow within Horizon 2020.

ERRAC is convinced that SHIFT²RAIL will bring research and innovation at a far broader range of technical readiness much closer to the business and operational needs of the rail operating community and the needs of the user/client. With the delivery of "large structure technical demonstration" (System Platform

³ Railroute 2050 document

⁴ More information on SHIFT²RAIL Innovation Programmes: www.shift2rail.org

⁵ Extract from the Communication on "Public-private partnerships in Horizon 2020: a powerful tool to deliver on innovation and growth in Europe": "The Commission does consider that the scale of research and innovation effort and the policy need to complete the Single European Railway Area and build EU leadership in rail technologies presents a good case for a potential Joint Undertaking in the railway sector and will work with the industry to develop a proposal."

Demonstrators), SHIFT²RAIL should facilitate a proper implementation of the results of this research and innovation programme.

Resulting from the collaborative efforts across technical and business boundaries, SHIFT²RAIL provides a backbone for bringing added value to the end users and addressing pressing societal challenges. The necessity for fundamental step changes in technological and technical developments is fully embedded into the ERRAC strategy. SHIFT²RAIL's overall targets of doubling the capacity of the European rail system, increasing its reliability and service quality by 50%, and halving the lifecycle costs support the implementation of this ERRAC market vision. SHIFT²RAIL will help fostering the competitiveness of the European rail sector, whilst improving the customer service experience

For the European Union at large this will deliver many benefits in the form of job creation, less pollution, and optimised and efficient public investments.

In order to realise the above mentioned visions and paradigm shifts, SHIFT²RAIL will deliver the following quantified targets with technology breakthroughs:

- Enhance the CAPACITY / User demand of the European Rail System
- SHIFT²RAIL research and innovation aims at an estimated overall increase of capacity in the rail market
- SHIFT²RAIL research and innovation aims at increasing user demand
- Consolidate the RELIABILITY / Quality of services of the European Rail System
- SHIFT²RAIL research and innovation aims at an estimated overall increase of reliability in the rail market
- SHIFT²RAIL research and innovation aims at increasing user satisfaction
- Improve on LIFE CYCLE COSTS / Competitiveness
- SHIFT²RAIL research and innovation aims at an estimated overall reduction of Life Cycle Costs in the rail market
- SHIFT²RAIL research and innovation will help the European manufacturing industry to, at least, keep its market share against increasing business competition

SHIFT²RAIL will impact all segments of the rail market: High Speed/Mainline, Regional, Urban/Metro & Suburban, and Freight and make daily life easier for millions of European passengers and rail freight users.

Finally, in order to guarantee a robust coordination among the different levels of research at European level, but also at national level, ERRAC and SHIFT²RAIL will closely interact and coordinate with other ETPs, the Member States and academics not only with regard to dissemination events but also identifying potential areas of cooperation in key technologies and including the deployment of investigated rail technologies.

Investment in rail Research and Innovation represents a major stake for the future of the European Union in meeting the main challenge of providing the EU citizens with efficient, comfortable and sustainable mobility. With Horizon 2020 about to be launched, the European rail sector recognises the huge challenges it faces but also the significant opportunities that the programme offers. Therefore, the role of ERRAC and its mission in enabling the dialogue between all stakeholders and coordinating their efforts towards a harmonised and necessary system approach remains crucial.

The proposed SHIFT²RAIL initiative represents a unique opportunity for Europe to create the rail system of the future. A new generation of railway products and services shall benefit to the whole rail system - greater added value and better value for money – and motivate the end users to make a true shift to rail, leading them to become end users of conviction while creating attractive new jobs in Europe.”

On June the 20th 2014, the European Commission organised in Brussels a stakeholder meeting at the occasion of the publication of the SHIFT²RAIL draft Master plan. Officially adopted on June the 16th by the EU Council, the new SHIFT²RAIL Joint Undertaking will seek focused research and innovation (R&I) and market-driven solutions by accelerating the integration of new and advanced technologies into innovative rail product solutions.

The presentation of the draft Master plan was the opportunity for ERRAC, which the ERRAC Strategic Board

also acts as the SHIFT²RAIL Advisory Council, to present its opinion on this unique initiative in the European rail sector. In presence of Mrs Manuela Soares (General Director at DG RTD) and Mr. Keir Fitch (Head of the Research and Innovation unit at DG MOVE) and their services at the European Commission, the ERRAC Chairmanship via its Vice Chair, Mr. Manuel Pereira, expressed their support to the current SHIFT²RAIL concept and its objectives in line with priorities identified by ERRAC through its Strategic Rail Research & Innovation Agenda (SRRIA).

In its presentation, Mr. Pereira (ERRAC Vice-Chair), on behalf of ERRAC, also pointed out some challenges for the development of the Joint Undertaking such as standardisation but also knowledge transfer. Finally, ERRAC ensured the European Commission of its full commitment to support the development of the rail research & innovation policy through SHIFT²RAIL but also via other financing opportunities for other rail related topics in Horizon 2020 as the new Joint Undertaking will not cover all of the ERRAC priorities from the SRRIA.

C. ERRAC Permanent Academia Advisory Group

A ERRAC Permanent Academia Advisory Group has been implemented and the SHIFT²RAIL interface with the future academic group of the Joint Undertaking (SHIFT²RAIL Scientific Committee) dedicated to SHIFT²RAIL has been discussed:

- **Kick-Off Meeting on 16.07.2014 in Brussels** → A ERRAC Permanent Academia Advisory Group was established and the European Commission (EC) presented the status of SHIFT²RAIL and the Draft Master Plan. DG Move involved in the development of the new Joint Undertaking for rail presented the state of play of SHIFT²RAIL. It was pointed out the possible synergies to be considered between the Scientific Committee within SHIFT²RAIL and the existing advisory group within ERRAC (Academia). The relationships should effectively try to be established as much as possible between the SHIFT²RAIL group and the ERRAC Permanent Advisory group. Further information should be provided on this matter by the European Commission services.

Regarding the SHIFT²RAIL Draft Master Plan, DG Move informed that the SHIFT²RAIL Master Plan is a living document that will be updated during the life of SHIFT²RAIL. Therefore comments/suggestions could be sent during all the SHIFT²RAIL life.

It was also pointed out by several participants that knowledge transfer between Railway Undertakings should be encouraged.

- **Meeting on 17.09.2014 in Brussels** → The ERRAC Academia Advisory Group was informed that ERRAC has sent a letter sent to DG Move. The purpose of the letter was to highlight the synergies that could be established between the SHIFT²RAIL Scientific Committee and the ERRAC Academia Permanent Advisory Group. Indeed the SHIFT²RAIL regulation foresees a Scientific Committee composed of Academia representatives. The main risk would be to have a duplication of activities between the SHIFT²RAIL Scientific Committee and the ERRAC Academia Permanent Advisory Group. The overlap between the two groups must be well managed in order to be efficient. The EC's answer (letter sent to ERRAC) highlights that the SHIFT²RAIL Governing Board will establish the criteria for the selection of the Scientific Committee representatives. The letter is encouraging since it is mentioned that synergies should be established between the SHIFT²RAIL Scientific Committee and ERRAC working groups.

As part of this it has been agreed that a commentary will be provided to SHIFT²RAIL on the strategy and objectives outlined in the SHIFT²RAIL Master plan. ERRAC Academia Permanent Advisory Group is concerned with wider aspects of research than just the SHIFT²RAIL activity but this document is a specific commentary on the SHIFT²RAIL Master Plan and the strategy and plans identified within that. The plan is to get the commentary ready by the end of 2014 to send it to the SHIFT²RAIL Joint Undertaking.

- **Meeting on 27.10.2014 in Brussels** → The ERRAC Permanent Academia Advisory Group continued working on the SHIFT²RAIL commentary document (Academic vision on the SHIFT²RAIL Draft Master Plan).

ERRAC Academia Permanent Advisory Group members were informed that ERRAC has been notified that the SHIFT²RAIL Joint Undertaking has launched a call for experts to be involved in the SHIFT²RAIL Scientific Committee.

It is envisaged that the S²R Scientific Committee and the ERRAC Academia Permanent Advisory Group will seek for a close cooperation. The ERRAC Academia Permanent Advisory Group will work in a transparent and open way with the S²R Scientific Committee.

D. ERRAC Permanent Member States Advisory Group

As far as the awareness-raising for the future SHIFT²RAIL “Member States Committee” is concerned, Foster Rail has played a considerable role as it made it possible to meet with Representatives of Transport and Research Ministries in no less than 10 Member States between May 2013 and June 2014. Here is the list of the meetings at Government level during which UNIFE raised awareness on SHIFT²RAIL and on the need for these Governments to be actively involved in the future Member States Committee:

Member State visited	City	Date	Government Representative(s) met
Austria	Vienna	22 May 2013	Mr Christian Drakulic and Ms Sarah Krautsack, Austrian Federal Ministry for Transport, Innovation and Technology, Department for Mobility and Transport Technologies
The Netherlands	The Hague	3 June 2013	Mr Erik van de Burgwal Ministry of Economic Affairs Mr Piet de Wildt, Mr Ronny van Belzen and Mr Hinne Groot, Ministry of Infrastructure and Environment
Poland	Warsaw	23 September 2013	Under-Secretary of State Jacek Guliński Ministry of Science and Higher Education Under-Secretary of State Andrzej Massel Ministry of Transport
Slovakia	Bratislava	15 October 2013	Mr Jiri Kubacek, General Director of Railway Transport and Railways Ms Ludmila Vodzinska, General Director for EU Matters and International Affairs Ministry of Transport
Romania	Bucharest	26 November 2013	Secretary of State Tudor Prisecaru Ministry of National Education
Estonia	Tallinn	6 December 2013	Mr Toomas Haidak and Mr Madis Ehastu Ministry of Economics and Communication
Slovenia	Ljubljana	11 December 2013	State Secretary Bojan Babič

			Ministry of Infrastructure
Ireland	Dublin	16 December 2013	Transport Minister Leo Varadkar
Croatia	Zagreb	6 February 2014	Ms Dubravka Đurkan Horvat, Directorate of transport infrastructure and EU funds Ministry of Maritime Affairs, Transport and Infrastructure
Bulgaria	Sofia	6 June 2014	Mr Peter Kirov, Deputy-Minister of Transport, Information Technology and Communications Mr Ivan Krastev, Deputy-Minister of Education and Science

Thanks to these meetings, a Permanent ERRAC Member States Advisory Group has been implemented and the SHIFT²RAIL interface with the future group of the Joint Undertaking (named SHIFT²RAIL States representatives group) dedicated to SHIFT²RAIL has been discussed:

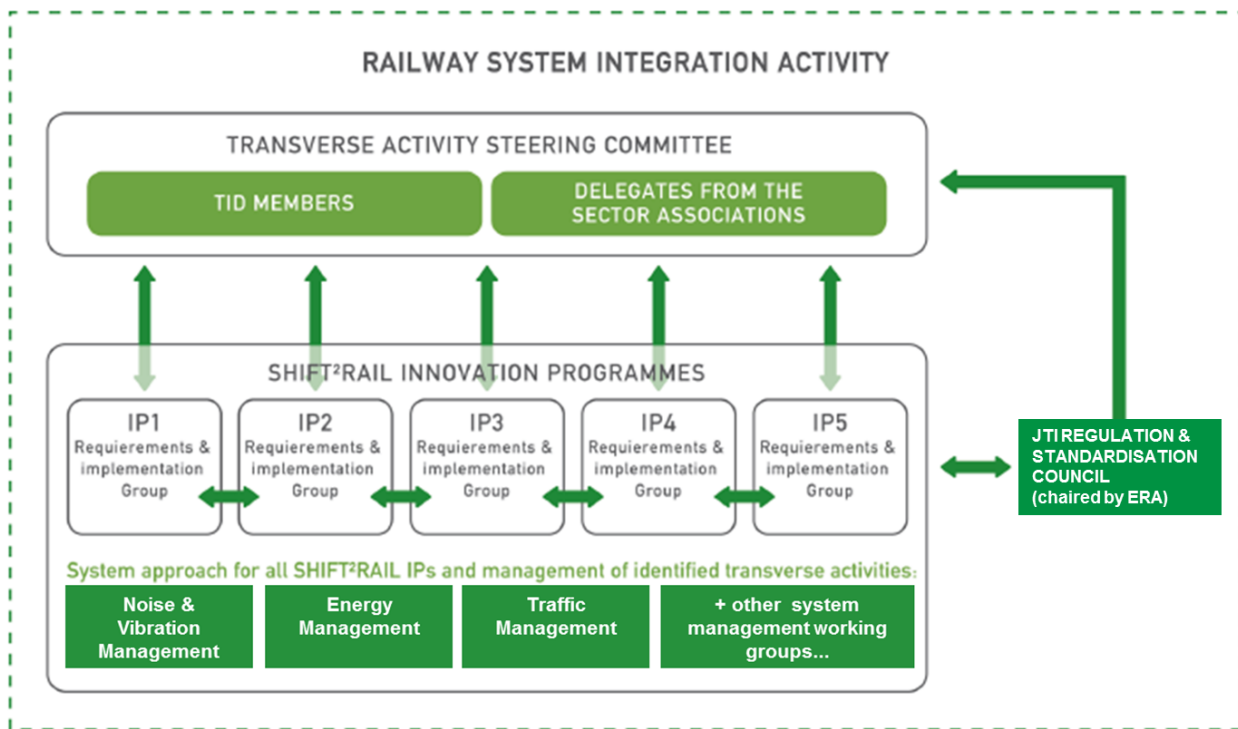
- Meetings on 15.10.2013 and on 16.07.2014 in Brussels: On the meeting on 16.07.2014 the European Commission (EC) presented the status of SHIFT²RAIL and the Draft Master Plan. DG Move involved in the development of the new Joint Undertaking for rail presented the state of play of SHIFT²RAIL. It was pointed out the possible synergies to be considered between the SHIFT²RAIL States Representatives Group within SHIFT²RAIL and the existing advisory group within ERRAC (Member States). The relationships should effectively try to be established as much as possible between the SHIFT²RAIL group and the ERRAC Permanent Advisory group. Further information should be provided on this matter by the European Commission services.

Regarding the SHIFT²RAIL Draft Master Plan, DG Move informed that the SHIFT²RAIL Master Plan is a living document that will be updated during the life of SHIFT²RAIL. Therefore comments/suggestions could be sent during all the SHIFT²RAIL life.

- The members of this group agreed with the following group activities:
 - Report on S²R
 - Focus and exchange on national technology platforms : experience to be shared
 - Presentation from national strategy and programmes – to be done at each meeting

E. A system integration activity working procedure idea and focus of FosterRail on the pre-requirement group

During the SHIFT²RAIL preparation the following possible system integration activity has been foreseen, discussing with different parties:



It has been discussed that this transverse activity would need to be created in order to carefully manage the functional interactions of the different layers of the railway system, by doing the following:

- Managing the “**Requirements and Implementation Groups**” (one for each IP; *managed within ERRAC in the preliminary phase*), that specify the operational and maintenance user needs (*railway Operators and Infrastructure Managers*), open to the entire community
 - For ERTMS related activities ERA will play its role of System Authority. This latter could also chair the **Standardisation and regulation Council**. UIC and UITP highlighted during the discussion that ERA would probably not be the right chair, for UIC there are other bodies that deals with international standards and for UITP ERA mandate is limited to mainline, therefore they do not represent the urban sector.
The need of involving CEN/CENELEC in this future group was considered important by the FosterRail partners.
- Progressing on the management sub-systems aspects that are only partially addressed by the R&I of the five IPs with dedicated “**System Management Working Groups**” where such issues as Traffic/Data Management, Diagnostic, Noise and Vibration mitigation measures, Energy Management and EMC/interference issues will be addressed by the Members of the Joint Undertaking at system level.

In FOSTERRAIL, “Pre-Requirements Groups” should be established for each of the technical areas addressed by the Shift²Rail proposal – one group for each of the “Innovation Programmes”.

Involving the European region of the UIC (incorporating the ROC contribution of both CER and EIM), UNIFE and UITP as well as the interested members of those associations, it is anticipated that this framework will

be structured as follows:

- UIC will lead the management of this process for this task and the creation of the working groups
- UNIFE and UITP will play a significant role in the development of this activity and in causing it to happen
- These associations and their interested members will be invited to nominate experts to participate in the work

In practice – see deliverable 5.2 and 5.3 – there was a creation of one single pre-requirement group and it was integrated within the preparatory phase of SHIFT²RAIL at later stage in order to try to boost the input from the interested parties.