

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 D1.2

Developing links and coordination strategies between ERRAC, EU and national technology platforms. State-of-the-art

WP	1	Cooperation, Communication and Coordination with other ETPs and national technology platforms
Task	1.2	Developing links and coordination strategies between ERRAC, EU, ETPs and national technology platforms. State-of-the-art

Dissemination level ¹	PU
Nature ²	R

Due delivery date	M12
Actual delivery date	M21

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Document Version	Date	Author(s)
Final	28/01/2015	Dennis Schut

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

The FOSTER RAIL project is addressing the challenge to strengthen and support research and innovation cooperation strategies in the European rail sector. The project's work plan foresees to enhance coordination among main stakeholders and actors in the European rail sector and rail industries and integrate the work done so far by ERRAC and its working groups. Starting with the already published ERRAC-ROADMAP, the FOSTER RAIL project will continue to coordinate the research and innovation agenda and priority setting process among the wide range of relevant stakeholders in the rail sector. The outcome of FOSTER RAIL will be a Rail Business Scenario as basis for new Strategic Rail Research and Innovation Agenda (SRRIA) and specific Rail Technology & Innovation Roadmaps aimed at 2050. The output will among others be used to advise the European Commission, Shift2Rail and other research programmes on their content.

Another significant task is the cooperation between the different modes of transport and their ETPs (the European Technology Platforms such as ERRAC, ERTRAC and WATERBORNE) within the Europe and within the European transport system (WP Task 1.1) as well as the cooperation between the European and the national levels (on Technology Platform level as well as on governance levels).

Task 1.2 addresses the need of structured cooperation between the railway research sphere at European level and in the MS/AS. Some contacts and links between these two levels have taken place in the previous years, but experience has shown that it requires further dedication, especially given the potential of establishing synergies, enhancing cohesion and avoiding duplication of efforts.

This report D1.2 deals with 2 different issues: that of the existence and organisation of a national equivalent to the ETP's, the National Technology Platform in one form or another as well as with the mapping and analysis of the national transport policy, the national railway policy and if possible also the national research priorities.

In order to make it possible to gather all the information which was required for this task, 2 questionnaires have been drafted by the partners responsible for this part of the FOSTER-RAIL project. It was decided to target all EU member States, Candidate States and Associated Countries. The questionnaires were sent out to a number of contacts within these countries and although the response was a little less than hoped for we were able to draw the first conclusions.

Part A of this report deals with the possible existence of National Technology Platforms for Rail. We have targeted 35 European countries and from the feedback we have learned that there are 8 National Technology Platforms or similar bodies in existence in 8 Member States. All details you will find below. In the next 18 months, more data will be gathered and checked, the data will be analysed deeper and recommendations will be developed in

order to establish a stronger working relation between the European and National level and especially between the European and the National Technology Platforms.

Part B of this report deals with the mapping of national transport policies in the 35 European countries targeted their railway policy and the priorities for railway research. The response to this was surprisingly low. However, we were able to draw some conclusions based on all material and data gathered: The top 5 common research priorities seem to be green technologies, health security and safety, further development of Information and Communications Technologies (ICTs), intermodality as well as infrastructure support and maintenance. More information will be gathered and analysed during the next second half of the project.

2. Part A – The National Technology Platforms for Rail

2.1 Executive summary

National Technology Platforms (NTPs) are undoubtedly the best interlocutors for the FOSTER-Rail programme. The shared focus on research can indeed multiply the benefits from synergic actions.

We have defined a National Technology Platforms as a sector-led stakeholder forum that develop short to long-term research and innovation agendas and roadmaps for action at national (and EU-) level to be supported by both private and public funding. It should involve all important stakeholders in the sector. For Rail this means among others operators, Infra-managers, supply industry, academia/research institutes and users (freight & passengers).

- Information of 18 out of 37 countries has been acquired. The process was very complicated and arduous, as the information required was very specific, the sources had different levels and types of information, and relation with the Rail R&D in their countries.
- From the 18 factsheets obtained, 8 countries have National Technology Platforms or similar bodies (Austria, Czech Republic, Lithuania, the Netherlands, Poland, Slovakia, Spain and United Kingdom).

The main findings are that the 8 identified NTPs share a number of common traits. They are interdisciplinary forums gathering industrials, rail operating community, universities, research centres, etc. entitled to promote projects at the national level; they are designed to produce guidance in establishing a framework of indicative priorities and are committed to support research by various means (funding, manning, expertise, coordinating, etc).

2.2 Introduction and objectives

This part-report is based on subtask 1.2.2 of Work Package 1 of the FOSTER-RAIL project which has the objective to focus on the identification of the railway technology platforms or similar bodies existing at national level in Member States, Associated States and the Candidate States so as to create a digital catalogue gathering key information from these bodies, including data such as: identification, mission of the NTP, organisational structure, activities, members, relations with other modes of transport, key documents, contact details etc.

2.3 Approach

The small team of FOSTER-RAIL partners working on this task have carried out the following steps and actions in order to fulfil the objectives of this subtask.

During the early stages of the project it was discussed on which European countries to focus. It was decided address the contacts gathered from all European Member States as

well as the Associated and Candidate countries. According to the expertise, language skills and contacts of the partners involved in this subtask, a division was made whereby the 4 members of the team had to cover a certain number of countries in search for a possible National Rail Technology Platform with rail stakeholders working together in some form or another. Information was also invited from countries with a body similar to an NTP.

John Amore on behalf of Network Rail (UK) has focussed on: United Kingdom, Ireland, Iceland, Denmark, Sweden, Norway and Finland

Aida Herranz and Eduardo Prieto on behalf of FFE (Spain) have focussed on: Spain, Portugal, France, Belgium, Germany, Italy and Switzerland

Dennis Schut on behalf of the UIC has focussed on: Slovenia, Croatia, Bulgaria, Hungary, Romania, Macedonia, Netherlands, Turkey and Austria

Bohuslav Dohnal on behalf of the Czech National Rail Technology Platform has focussed on: the Czech Republic, Slovakia, Poland, Estonia, Latvia, Lithuania, Luxembourg, Malta, Greece and Cyprus.

The first overview of results has been compiled by FFE, followed by an in-depth analysis by the UIC.

In order to deal with this task and to explain to the national contacts what exactly it was that we were looking for, it was necessary to exactly define for ourselves what we understood by the term “National Technology Platform”.

After a discussion we agreed to work on the basis of the following definition and description:

A National Technology Platform (NTP) is a sector-led stakeholder forum that develops short to long-term research and innovation agendas and roadmaps for action at national (and EU-) level to be supported by both private and public funding. It should involve all important stakeholders in the sector. For Rail this means among others operators, Infra-managers, supply industry, academia/research institutes and users (freight & passengers).

The NTP plays an important role by developing joint visions, setting Strategic Research and Innovation Agendas and contributing to the definition of the research priorities for the sector.

The NTP is an independent organisation which supports the national government in implementing their (research and transport) policies and therefore has a direct link to the national government. It is regarded by the policy and funding organisations as the “voice of the sector”.

The NTP will therefore be a key element in the national “innovation ecosystem” and will help to stimulate innovation on a national level by taking a holistic view and:

- Developing strategies and provide a coherent business-focused analysis of research and innovation bottlenecks and opportunities related to societal challenges and industrial leadership actions

- Mobilising industry and other stakeholders within the country to work in partnership and deliver on agreed priorities
- Sharing information and enable knowledge transfer to a wide range of stakeholders across the country and the EU.

Following this, a template for the collection of information (Factsheet: vs2 -10th December 2013 and a questionnaire were designed in order to gather all the relevant information concerning NTP in each country (See Annex II). For the use in cases where no NTP exists, it may need adaptation that should be tailor-made for each case. All partners contributed to the creation and development of the factsheet.

Building on these activities, the team went to work to gather the information needed. Each of the partners got in contact with representatives from the indicated countries, searching for the information about a possible National Technology Platform. Due to the fact that obtaining information from certain sources was a quite labor intensive task and unfortunately often in vain, more general actions were developed such as:

- Using existing report and EC funded project deliverables (such as for instance from the TRANSNEW project)
- ERRAC member state group representatives were contacted to obtain information.
- Sending an official petition by the Work Package coordinator to the members of the ETNA Plus consortium of National Contact Points in order to obtain more information. The project coordinator also made a presentation on the FOSTER-RAIL project and especially on the importance of the work of WP1 and Task 1.2. He asked the NCP's personally for their cooperation and contributions, however without any result!

2.4 Method

In order to favour an enhanced collaboration between NTPs within FOSTER-Rail, the following categories have been established to identify their priorities, their range of action as well as their scope of resonance:

- **Projects, research, innovation**
 - Identify / Define: the NTP is able to identify projects which can be pushed forward and/or can set research & innovation priorities at the national level.
 - Promote: the NTP can promote existing projects, granting them further visibility or finding partners.
 - Realise: the NTP has the necessary means to conduct the project by itself with eventual partners.
 - Coordinate: the NTP can coordinate a project of its members at the national level.
 - Fundraising: the NTP is allowed to raise funds outside members' contributions for a project of its own or from its members.

- **Priorities**

- Providing guidance: the NTP was created to guide national research and organise relevant rail sector partners' capabilities.
- Supporting research: the NTP is committed to supporting research at both national and European level.
- Guaranteeing intermodality: the NTP has a strong focus on promoting intermodality at the national level.
- Guaranteeing interoperability: the NTP is committed to developing interoperability at the national level.
- Fostering harmonisation & homogenisation: the NTP coordinate the harmonisation and homogenisation of regulations at the national level.
- Promoting competitiveness: the NTP acts as a promoter for rail competitiveness for the industrials and/or the rail operating community and/or the end-users.
- Enhancing safety system: the NTP aims at enhancing overall rail safety system with its expertise.
- Producing regulations: the NTP is entitled to produce national-level regulations, whether they are indicative or legal obligations.
- Sharing knowledge: the NTP acts as a platform
- Encouraging sustainable transports: the NTP has a strong focus on sustainability for rail.

- **Networking & Communicating**

- Internal networking / forum: the NTP permits the development of synergies by connecting its members.
- Communication toward public opinion: the NTP regularly publishes about its activity for the public opinion for informing and/or influencing.
- Lobbying (national level): the NTP has a lobbying activity with national transport policy-makers.
- Networking / Lobbying (EU level): the NTP is entitled to engage with other entities at the European level and/or can do lobbying at European institutions.

This list of criteria divided in three categories provides a solid basis to identify the many overlapping of interests and methods which may result in possible NTPs cooperation within the FOSTER-Rail framework.

2.5 Findings

On the basis of these criteria and the received answers to questionnaires, it is possible to establish the “NTP matrix” below (a larger version can be found in the annex part).

	Country NTP	Austria	Czech Republic	Lithuania	Netherlands	Poland	Slovakia	Spain	United Kingdom
		RTCA	CZTP	CCITL	RAILFORUM	PPTTS	PSKD	PTFE	RSSB
Projects, research, innovation	Objectives								
	Identify / define								
	Promote								
	Realise								
	Coordinate								
Priorities	Fundraising								
	Providing guidance								
	Supporting research								
	Guaranteeing intermodality								
	Guaranteeing interoperability								
	Fostering harmonisation & homogenisation								
	Promoting competitiveness								
	Enhancing safety system								
	Producing regulations								
	Sharing knowledge								
Networking & Communicating	Encouraging sustainable transports								
	Internal networking / forum								
	Communication to public opinion								
	Lobbying (National level)								
	Networking/Lobbying (EU level)								

Out of the eight platforms, five indicated a precise angle in their interdisciplinary cooperation: 2 are customer-oriented (RTCA and RAILFORUM) and three are industry-oriented (CZTP, PTFE and RSSB).

2.5.1 Functioning of the NTPs

The functioning of these NTPs regarding projects / research / innovation appears to be as follow:

- All NTPs are able to promote projects
- 5 can identify projects and define priorities: RTCA, CZTP, PSKD, PTFE and RSSB.
- 5 are allowed to coordinate projects: RTCA, CTZP, CCITL, PTFE and RSSB.
- 2 can conduct projects on their own: RTCA and RSSB.
- 2 may raise funds apart from member's contributions for projects: CZTP and RSSB.

2.5.2 Priorities

The priorities of the 8 NTPs are linked and have some common points but each NTP policy is different:

- All NTPs are designed to provide guidance
- All NTPs are committed to support research
- 5 NTPs are promoting intermodality in projects: CZTP, CCITL, PPTTS, PTFE and RSSB.
- 3 NTPs are pushing for a higher rail interoperability: CZTP, PPTTS and PSKD.
- 3 NTPs have a focus on promoting rail competitiveness in transportations: CZTP, PPTTS and PTFE.
- 2 NTPs have the mission to favour rail harmonisation and homogenisation at the national level: CZTP and CCITL.
- 2 NTPs have the power to produce regulations, whether indicatives or legally binding: CZTP and RSSB.
- 2 NTPs act as a platform for knowledge-sharing between members: RTCA and RAILFORUM.
- 2 NTPs are strongly encouraging the development of greener rail: RAILFORUM and PTFE.
- Only RSSB has a devoted task on enhancing safety system.

2.5.3 Networking and Communicating

The 8 NTPs have different approaches on their networking and communicating policies:

- 5 NTPs are designed to be a networking forum besides their guiding role: RTCA, RAILFORUM, PPTTS, PSKD and RSSB
- 4 NTPs have a lobbying activity at the national level: RTCA, RAILFORUM, PSKD and PTFE.
- 4 NTPs have a networking activity at the European level and/or a lobbying activity directed to the European institutions: RTCA, CZTP, PPTTS and PTFE.
- 3 NTPs have a communication & influence policy toward the public opinion: RAILFORUM, PPTTS and PSKD.

3. PART B - Report on the national transport policies, rail policies and rail research priorities

3.1 Introduction and objectives

This part of the report is dedicated to understanding how the railway research is organised at national level in the European Countries, both from the governmental point of view for setting the political priorities and research strategies, and from the stakeholders' point of view for performing the research itself having in mind the market demands. This part of the report explains the approach we have chosen and provides a first result of the mapping of these countries we have carried out in order to find useful information about transport policies, railway policies and railway research priorities. The aim of the work is a future linking up and coordination and cooperation between the European and national level to strengthen the role of the railways within the total European transportation system with all the benefits that will bring.

3.2 Approach

Although it was initially the plan to focus on “some major countries” it quickly became clear that the feedback on the special questionnaire we have developed was not very promising, reason why we have decided – just as in the case of the mapping of National Rail Technology Platforms – to address all possible European Members States, Associated States and Candidate States alike. The task of addressing these all in all 37 countries was divided between 4 of the project partners the UIC, FFE, The Czech National Rail Technology Platform and strong ERRAC supporter Mr. John Amoore on behalf of Network Rail.

In the meantime we carried on addressing possibly useful national contacts and even presented the FOSTER-RAIL project in general and the needs of this Work Package in particular to the dedicated group of National Contact Points gathered in the ETNA+ Project, an action which unfortunately led to no results whatsoever. The lack of information because of the very low response to the questionnaire was then compensated by carrying out a major scan of available literature and results of EC funded projects such as in particular the excellent FP7 project TRANSNEW as well as gathering of web based information.

This report is based on all available information at the moment of writing. It is by no means complete but already provides some useful insights. During the second part of the project, action will be undertaken to gather additional information and fill the gaps in close coordination with the newly formed ERRAC Permanent Advisory Group of Member States and will eventually lead to a second report on the topics covered in this report and will lead to recommendation of how to strengthen the cooperation between European and national levels.

3.3 Method

One of the aims of the FOSTER-RAIL project is to gather stakeholders from various countries to favour a pooling and sharing of research and innovation capacities. In spite of unique sets of national rail policy and research priorities for each country involved, it is possible to draw several generic policy profiles which allow a better comprehension of the overall rail policy situation in Europe.

Three groups of countries appear through analysis. First, a “modernising group” which is totally focused on transforming its infrastructure/rolling stock/railway sector and thus a few interest or will in researching. Then, an “adapting group” which is willing to further increase an already good rail capacity and has an average commitment to researching due to financial considerations for improvement of rolling stock and infrastructure. Finally, an “optimising group” particularly linked to environment-driven concerns and developing future railway concepts which have the strongest potential for research and innovation as its railway sector only needs optimisation.

These group profiles help to draw the main research priorities from countries although there is no automatic connexion between profile and research priorities. A lot of these are cross-cutting the “groups” and thus justify a closer look in each research priorities. The top 5 common research priorities are green technologies, health security and safety, further development of Information and Communications Technologies (ICTs), intermodality as well as infrastructure support and maintenance. This basis may be of use in order to prepare the most relevant research roadmap according to each stakeholder’s priorities.

It is important to note that a lot of questionnaires were not returned or returned incomplete, definitely hampering a clear and complete analysis. Insufficiencies have been mitigated through searches – mainly web-based – but are not sufficient to provide the most accurate analysis.

3.4 National transport and rail policies analysis

3.4.1 Overview: countries generic profiles

As a platform to further deepen and support common rail research within Europe, it is a necessity that FOSTER-RAIL is provided with a complete database on each stakeholder’s interests regarding transport and especially relevant data from rail policy.

Countries included in the FOSTER-RAIL survey all present a unique profile in the light of their national transport and rail policy programmes. A certain number of stakeholders stated that transportations and more specifically railroad do not belong to the top national priorities, like Albania, Montenegro, Norway or Turkey to quote some. However, by crossing answers from questionnaires, it is possible to distinguish several patterns.

The following categories were drawn from the answers to the few fully completed questionnaires received as well as from complementary researches:

- **Modernising:** the country is primarily focused on a complete renewing of its aging infrastructure and rolling stock and/or transforming its rail sector in a comprehensive approach. Optimisation, innovation and environmental sustainability of railroad are not priorities but they may be included in national or European rail development programmes. The country may also be engaged in massive construction of lines or major investment projects.
- **Adapting:** the country is willing to further adapt the rail to actual demand and needs. This includes a lighter modernisation than the “modernising” profile (greening of materials, implementation of ICTs, development of new management practices, optimisation of maintenance...) as well as transformations within the rail sector stakeholders (for instance minor privatisations or separation/fusions of RUs and IMs). Limited construction of new lines may be included. Optimisation, innovation and environmental sustainability of railroad are not priorities but they may be included in national or European rail development programmes
- **Optimising:** the country is highly concerned by bottlenecks, more generally speaking congestion problems. It is inclined to optimise the rail traffic by either improving rolling stock/infrastructure capacity, using them in a more efficient way (close headways, Command, Control and Communications improvements, better signalling system, increased use of ICTs etc.). The optimising country has also expressed particular interest in cost-efficiency, both regarding maintenance and purchasing. Innovation and environmental sustainability of railroad are not top priorities but they may be included in national or European rail development programmes
- **Environment-driven:** the country is extremely invested in developing environment-friendly technologies/products and energy-efficiency components/systems/methods. It has undertaken major projects to implement these sustainability logics into new programmes as well as in existing infrastructures/rolling stock. Optimisation and environmental sustainability of railroad are not top priorities but they may be included in national or European rail development programmes
- **Innovating:** the country is committed in developing future concepts and innovative products and services in rail-related areas. Transport and especially rail research is an important feature of this country’s national policy.

A country's national policy fits in at least one of the above criteria and most profiles are the combination of 2-3 traits. Based on the above-mentioned typology, the following sorting can be established:

	Modernising	Adapting	Optimising	Environment-driven	Innovating
Albania	x				
Austria			x	x	x
Bosnia	x				
Bulgaria		x		x	
Croatia		x	x	x	
Czech Republic			x	x	x
Estonia	x			x	
France		x	x		
Germany			x	x	x
Greece		x			
Hungary			x		
Italia		x	x	x	
Latvia	x		x	x	
Lithuania	x		x	x	
Luxemburg			x	x	x
Macedonia	x		x		
Montenegro	x		x		
Netherlands			x	x	x
Norway			x	x	
Poland		x			
Portugal		x		x	
Romania		x			
Serbia	x				
Slovakia		x	x		
Slovenia		x	x		
Spain		x	x		
Sweden			x	x	x
Switzerland			x	x	x
Turkey		x	x		
United Kingdom		x	x	x	x

Three main groups appear from the sorting: a “modernising group”, an “adapting” one and an “optimising” one:

- The “modernising” group of countries is totally focused on transforming its infrastructure/rolling stock/railway sector and thus has few interest or will in researching due to financial matters.

- The “adapting” group of countries is willing to further increase an already good rail capacity and has an average commitment to researching due to financial considerations for improvement of rolling stock and infrastructure
- Finally, an “optimising” group of countries particularly linked to environment-driven concerns and developing future railway concepts which have the strongest potential for research and innovation as its railway sector only needs optimisation.

These three-groups sorting help understanding what the research & innovation needs in railway are for each country and which pooling & sharing strategy could be implemented in accordance where their research priorities.

3.4.2 Top most common policy priorities

Generic profiles allow a better comprehension of the type of priorities expressed by each country. However, a more in-depth study on the policy priorities reveals that some fifteen precise common priorities emerge, crossing the different national profiles. The top five priorities are, ranked from 1 to 5, are as follow:

1. Sustainability

27 countries expressed their will to further develop a sustainable rail system which will integrate environment-friendly technologies, particularly on matters related to pollution, noise and vibrations.

2. “Intermodality”

Having a much better connexion between two or more modes of transports has been stated as a priority by 22 countries. Projects include the design of intermodal hubs gathering at least heavy rail and urban transportations, with plane in airports and ships in harbours.

3. Safety & Security

Safety and security are raised as national priorities in no less than 21 countries covering the guarantee that the passenger can enjoy the safest travel, the best working conditions for railway people and the protection of third parties at critical interfaces. Security at hubs and stations is also a rousing concern, particularly against terror attacks.

4. Modernisation & Refurbishment

20 countries announced their will of modernising rolling stock or infrastructure to a various degree. This modernisation desire ranges from full replacement of outdated material up to limited upgrade in order to cope with new rail-related technologies.

5. Cost-efficiency and Energy efficiency

16 countries share a common interest in developing and using cost-efficient methods/materials especially regarding maintenance. They also seek to implement more energy-efficient components in rolling stock/infrastructure using various methods including smart grids.

The remaining 10 priorities are shared by fewer countries and can be found below, in the “National Rail Policy Priorities” matrix (a larger and more readable version can be found in the annex part).

[illegible]

3.5 Rail research priorities analysis

3.5.1 Overview

The birth continent of the modern railroad in 1804, Europe is and remains the world leader in rail-related areas. Nowadays, the European rail research encounters nonetheless a highly varying interest from the different European countries – no matter if they are EU-member or not. This divergence of prioritisation among them and within EU is to be linked to their perceived national needs, capabilities as well as political attraction for rail.

Such a discrepancy being an impediment to efficiently coordinate European rail research within the FOSTER-RAIL programme, the following synthesis intends to provide the European Commission as well as to FOSTER-RAIL Steering Comity an overview of

national research priorities in order to further establish a better pooling and sharing of research capacities and interests.

Due to the lacking or incomplete reply to our questionnaires from a lot of stakeholders, the analysis will not be able to be the fully comprehensive synthesis on European rail's major research priorities it should be. It will thus focused on the few material received and completed by searches - mainly web-based – when information was available.

3.5.2 Top common research priorities

54 research priorities may be established to prepare a sorting to determine a pooling and sharing policy. The research sectors apparently gathering most interest from members are quality of rail service for users and employees, Command, Control and Communications (CCC), infrastructure as well as energy and sustainability.

The top 10 research priorities, ranked from 1 to 10 – not taking into account the numerous equalities, are as follow:

1. Green technologies

Either as a research *per se* for rail or integrated as a part of other type of research, environment-friendly technologies are a top research priorities for 10 countries.

2. Health, safety and security

9 countries expressed a deep interest in prioritising health, safety and security within rail research in all rail-related areas, to provide the best conditions environment for passengers, railway people and third parties.

3. Information and Communications Systems (ICT)

Further developing and integrating new information and communications technologies within the rail sector has been stated as a priority by 9 countries, to provide a seamless journey for passenger (train and stations as simple extension of working/leisure environment), to increase the quality of rail service through real-time management, maintenance and reaction.

4. "Intermodality"

8 countries are committed to continue researching intermodal transportations, in order to further increase the connectedness of rail with other modes of transport through well-designed and accessible hubs.

5. Infrastructure support and maintenance

Good condition infrastructures are vital to maintain a quality rail service and receive a special attention in researching by 8 countries. Improving the management of maintenance

and support of infrastructure will benefit globally to the society by allowing faster, safer and more comfortable journeys, both for passengers and freight.

6. Command, Control and Communication reliability

As the core part of the railway system which manages all train traffic, Command, Control and Communications are an organ which failure has major repercussions on the entire system. Increasing reliability for minimising any failure on informatics, electronics and human component is a priority for 7 countries.

7. ETCS/ERTMS

Further developing and easing the implementation of the European Train Controlling System (ETCS) and the European Railway Traffic Management System (ERTMS) is a necessity at the European level to guarantee an increased interoperability of materials and skills but also a greater security and safety. 6 countries have a strong interest in this area of researching.

8. Time management for train journey

Better time management of train journey to provide a higher quality in train service but also to optimise the traffic is in the research agendas of 6 countries.

9. Future energy source

Railway is the less polluting transport among all types thanks to its minor rejection of CO₂ due to a limited use of fossil energies. However, improvements can be made in its consumption of electricity (quantity, type, source, etc.) as well as developing new types of energy to be used, a research that attracts the attention of 6 countries.

10. Future freight trains

Freight is an important activity of railway, representing a profitable source of revenue for the railway undertakings (RUs) but suffers from less attention in researching and innovating. 5 countries are committed to further develop freight trains to attract more freight customers from other modes of transport while being environment-friendly.

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The 44 remaining priorities can be found below, the “National Rail Research Priorities” matrix (a larger and more readable version is in the Annex part).

Priority	1	2	3	4	5	6	7	8	9	10	Priority	21	22	23	24	25	26	27	28	29	30	
Tech	Green Technologies	Health, safety and security	Communication and Information systems	Intermodality	Infrastructure support & maintenance	CCC reliability	ETCS/ERTMS	Time Management for train journey	Future energy source	Future Freight trains	Tech	Whole systems architectures and models	Culture, Behaviour and Collaboration	Customer Social and Emotional profiling	Accessibility	Closer running	Passenger environment and experience	Rail and switches and crossing	Rail structure and sub-structure	Track structures (civils)	Smart grid	
Country	Austria	Albania	Austria	Austria	Austria	Bulgaria	Albania	Albania	Austria	Austria	Country	Serbia	Austria	Austria	Norway	Albania	Austria	Austria	Austria	Austria	Austria	
	Czech Republic	Bulgaria	Bosnia	Bosnia	Bosnia	Croatia	Croatia	Netherlands	Norway	Czech Republic	Country	Switzerland & Liechtenstein	Netherlands	Switzerland	Turkey	Netherlands	Turkey	Netherlands	Netherlands	Netherlands	Slovenia	
	Netherlands	Czech Republic	Croatia	Netherlands	Croatia	Czech Republic	Netherlands	Norway	Serbia	Slovenia	Country	Turkey	Switzerland & Liechtenstein	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	
	Norway	Netherlands	Czech Republic	Norway	Czech Republic	Netherlands	Switzerland & Liechtenstein	Sweden	Slovenia	Turkey	Country	United Kingdom	United Kingdom									
	Poland	Norway	Netherlands	Poland	Norway	Switzerland & Liechtenstein	Turkey	Switzerland	Turkey	United Kingdom	Priority	31	32	33	34	35	36	37	38	39	40	
	Serbia	Poland	Serbia	Switzerland & Liechtenstein	Switzerland & Liechtenstein	Turkey	United Kingdom	United Kingdom	United Kingdom		Tech	Guidance and learning	Decision making	Major Systems Interfaces	Whole System Asset Management	Freight customer	Railway Customer database	Virtual ticketing	DAS	Rolling stock interfaces	Passenger stations	
	Slovenia	Serbia	Switzerland & Liechtenstein	Turkey	Turkey	United Kingdom					Country	Czech Republic	Austria	Switzerland & Liechtenstein	Serbia	Turkey	Austria	Turkey	Czech Republic	Norway	Turkey	
	Switzerland & Liechtenstein	Slovakia	Turkey	United Kingdom	United Kingdom						Country	Switzerland	Turkey	Turkey	Switzerland & Liechtenstein	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	
	Turkey	United Kingdom	United Kingdom								Country	United Kingdom	United Kingdom	United Kingdom	United Kingdom							
	United Kingdom										Priority	41	42	43	44	45	46	47	48	49	50	
Priority	11	12	13	14	15	16	17	18	19	20	Tech	Freight terminals	Climate resilience	Recruitment and retention	Railway systems thinking	Concepts of operation	Whole System Technology Watch	ATO	Train Positioning	Level crossings	Innovation Support resources	
Country	Train energy and motion	Train operability and control	Rolling stock support and maintenance	Infrastructure information systems	Noise and Vibration reduction	Passenger end-to-end journey	Personalised Right Time Info	Passenger Train Architecture	Efficient Infrastructure management & maintenance	Plant and traction rolling stock	Country	Turkey	Norway	Poland	Switzerland		Switzerland & Liechtenstein	Switzerland & Liechtenstein	United Kingdom	United Kingdom	United Kingdom	United Kingdom
	Austria	Austria	Croatia	Austria	Albania	Austria	Austria	Austria	Austria	Austria	Country	United Kingdom	United Kingdom	United Kingdom	United Kingdom		United Kingdom	United Kingdom				
	Czech Republic	Czech Republic	Czech Republic	Croatia	Norway	Norway	Slovenia	Slovenia	Bosnia	Serbia	Priority	51	52	53	54							
	Slovenia	Switzerland & Liechtenstein	Switzerland & Liechtenstein	Czech Republic	Poland	Turkey	Turkey	Turkey	Switzerland & Liechtenstein	Switzerland & Liechtenstein	Tech	Enhancing innovative capability	Skills and learning	Human factors and automation	Technical Railway School							
	Turkey	Turkey	Turkey	Switzerland & Liechtenstein	Serbia	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	Country	United Kingdom	United Kingdom	United Kingdom	United Kingdom							
	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom																	

ANNEX A – REPORT PART A – National Rail Technology Platforms – NTP

In this Annex A you will find the questionnaires used to gather the NTP related information from the addressed European Countries. (For some reason, 2 slightly different questionnaires have been used. The categories of questions have been combined when analysing the results). Following this you will find the facts sheets/ completed questionnaires of the countries in alphabetical order.

1. Questionnaire NTP 1

QUESTIONNAIRE 1

National Rail (Research) Technology Platforms or similar bodies in the EU MS/AS

Introduction

FOSTERRAIL – the FP7 EU funded - project supports ERRAC - the European Rail Research Advisory Council to the European Commission. The project which started in may 2013 will deliver a Rail Business Scenario, an updated SRRIA - Strategic Rail Research & Innovation Agenda - as well as updated Roadmaps describing and planning the rail research priorities between the near future and 2050.

WP1 deals both with the cooperation with the **European Technology Platforms** in the other modes of surface transport as ERTRAC – on Road transport - and Waterborne – on shipping - as well as with cooperation and coordination between the activities at a European level and those at a national level. A so-called Technology Platform gathers all relevant stakeholders from a certain area such as Rail: operators, infra-managers, academia, user groups, industry

This questionnaire deals with the tasks and organisation of a possible National Rail Research Technology Platform - NTP - which exists in a number of Member States and might exist in your country.

In case a National Technology Platform for Rail exists in your country, would you please complete this questionnaire and send it back to me **before 26 February 2014.**

If not, please ignore this first questionnaire and just inform me that no National Rail Research technology Platform exists in your country. Thank you very much for your support!

Please return to:

Dennis Schut – FOSTERRAIL project Coordinator
schut@uic.org (www.uic.org and www.errac.org)

UIC – International union of Railways
53. Avenue des Arts – B 1000 – Brussels – Belgium
Tel. +32 2 213 0832 or +33 609091060

2. Questionnaire NTP 2

PLEASE Complete these questions
--

COUNTRY	
---------	--

NAME OF THE National Rail Technology Platform or SIMILAR BODY:
--

<if you have please add a LOGO >

DESCRIPTION
<i>Please provide a brief background information including a short description, year of creation, type of entity, mission, role...etc.</i>

MISSION
<i>Please describe in short the main purpose of the technology platform, overall goal and indication of the different bodies and institutions to whom the technology platform reports to etc.</i>

OBJECTIVES
<i>Please describe in short the objectives of the technology platform)</i>

STRUCTURE
<i>Please provide some information about the governing structure, organigram, information on Terms of Reference when applicable, way of working...</i>

MEMBERS
<i>Please provide some information on the type of entities that can be part of the platform; current membership composition: number of members, typology, evolution in the time...</i>

KEY DOCUMENTS
<i>Please list the key documents elaborated in the framework of the platform and the year of elaboration. E.g. strategic research agenda for the sector, R/D and innovation priorities...</i>

RELATION WITH OTHER MODES OF TRANSPORT / OTHER SECTORS

<i>Please provide an indication of the relationships – if any- of the National Rail Technology Platform with technology platforms from other modes of transport or other sectors</i>
--

CONTACT

<i>Please provide the contact details of the National Rail Technology Platform, including web-site and the contact details of a person that can provide further information</i>

3. NTP Factsheets/ questionnaires of the European Countries

Factsheet Austria

National Technology Platforms or similar bodies existing in the MS/AS

FOSTER RAIL - WP1, task 1.2.

Austria

RTCA- Rail Technology Cluster Austria



DESCRIPTION AND MISSION

The Goal of Rail Technology Cluster Austria is to improve railway system technology and service quality through the development and implementation of innovative new products, ideas and operating strategies.

Creation of an R&D network for sustainable development of future rail technology (operators, industry, SME, universities and research institutes) Networking and lobbying for common Austrian interest Stimulation of cooperation in the development of new systems. Focussing of know-how, competence and innovation in the rail sector.

OBJECTIVES

The RTCA seizes, promotes and realizes topics that are of high importance for the whole railway-community (including light rail) with focus on operative relevance. Content work is done in working groups where potential R&D needs can be derived. RTCA offers a neutral platform for research, development and project-management.

Moreover our activities include the internal networking among cluster members, the coordination of cluster projects and the organisation of events and presentations. We are also responsible for the networking with key representatives within national public authorities and the EU.

STRUCTURE

Nonprofit organization:

- General Secretariat (2 Persons: General Secretary, Project Manager)
- Executive Board (5 Members of Industry, Operators and Science)
- Steering Committee (4 Members of Industry, Operators, Science and the Austrian Ministry of Transport)

MEMBERS

The Rail Technology Cluster is a technology oriented platform that supports interdisciplinary cooperation between operators, industry, small and medium-sized enterprises and science. As a neutral and independent competence-network 44 Members are not only from Austria; RTCA is also Member of ERCI (European Railway Cluster Initiative) and so it has more than 70 national and international partners for cooperation.

CONTACT

RTCA-Rail Technology Cluster Austria

Karlsgasse 5/3. Stock

A-1040 Wien

Tel:+43-1-8905906

E-Mail: office@rtca.at

www.rtca.at

Factsheet Czech Republic

National Technology Platforms or similar bodies existing in the MS/AS

FOSTER RAIL - WP1, task 1.2.

Czech Republic

Czech Technology Platform

Interoperability of Railway and Infrastructure



NÁRODNÍ TECHNOLOGICKÁ PLATFORMA
Interoperabilita železniční infrastruktury
CZECH TECHNOLOGY PLATFORM
Interoperability of Railway Infrastructure



DESCRIPTION

Czech Technology Platform (CZTP) is an association which in accordance with the initiative of the European Commission – COM (2004) 353 final of Article 4.7 brings together companies, research institutions, universities and government institutions to establish a joint research program in the context of interoperability in the construction and maintenance of the railway infrastructure, energy, control, command and signaling and related work on projects.

CZTP has been a legal entity since 4th January 2008 and is a part of the system of national technology platforms of the Czech Republic (CR) and meets all the conditions set out by the definition for the activities of NTP.

CZTP is a member of ETP ERRAC and is validated by the European Commission (Research Executive Agency) as a member of the EU (project) consortiums.

The platform is a mean of the Ministry of Industry and Trade and cooperates with the Ministry of Education, Youth and Sports and the Ministry of Transport of the Czech Republic.

MISSION

The main purpose of the CZTP is an active, specific contribution to achieve the consistency of production of industrial activities of the members of the CZTP - construction, manufacture and maintenance of railway infrastructure in accordance with the requirements and regulations of the European Parliament with the requirements of European railway interoperability of conventional and high-speed system, following the Technical specifications for interoperability (TSI), European standards and regulations.

Requirements associated with achieving of the compliance of production with the requirements of interoperability in the following areas:

- Construction of railway lines, railway substructure and superstructure
- Production of control, command and signaling system equipment
- Electrification of the railway lines, manufacture of electric traction equipment
- Construction of railway bridges and tunnels
- Construction of railway stations and associated facilities
- Production of building components and other equipment of railway infrastructure

Supporting activities include the activities of universities, vocational schools, research and project institutes, i.e.:

- Scientific research and development activities
- Testing engineering
- Assessment of production
- Designing activities
- Expert and consulting activities
- National and international standardization
- Educational activities

Compliance with the requirement to ensure interoperability of products and technologies is a mean to increase competitiveness and open up new opportunities for Czech companies in the EU market.

The achievement of this overall goal is made possible by the membership of SŽDC (RIA) in CZTP and cooperation with them.

CZTP activity is mutually coordinated with the Ministry of Transport, Ministry of Industry and Trade, Ministry of Education and Technology Agency of the Czech Republic.

At the International (European) level is the cooperation in participation in European projects Foster Rail, IRRB and HORIZON2020 (including the upcoming JT SHIFT2RAIL).

OBJECTIVES:

- Promoting innovation and enhancing the competitiveness of the members of the CZTP.
- Structuring and supporting the implementation of projects of development, research, and testing to ensure current production of TP members with the requirements of the technical specifications for interoperability in the trans-European rail system, subsystems, infrastructure, energy, control, command and signaling.
- Raising funds for implementation of these above projects .
- Applying the share of members in international (European) activities related to creating new regulations for the construction, manufacturing and maintenance and post-production testing and evaluation of the production of the European Rail Industry.

STRUCTURE:

CZTP is a legal entity and has the following authorities:

- The Management Board
- The Chairmanship of the Management Board
- Executive Director and Secretariat

The main tools for professional activities are:

- Expert Groups:
 - Infrastructure
 - Energy
 - Control, Command and Signalling
 - Interface systems
- The Council for Research and Development
- The Board of Evaluators
- The National Networks
 - Research and Development
 - Education and Training
 - Testing Engineering
- International Network of European Railway Interoperability

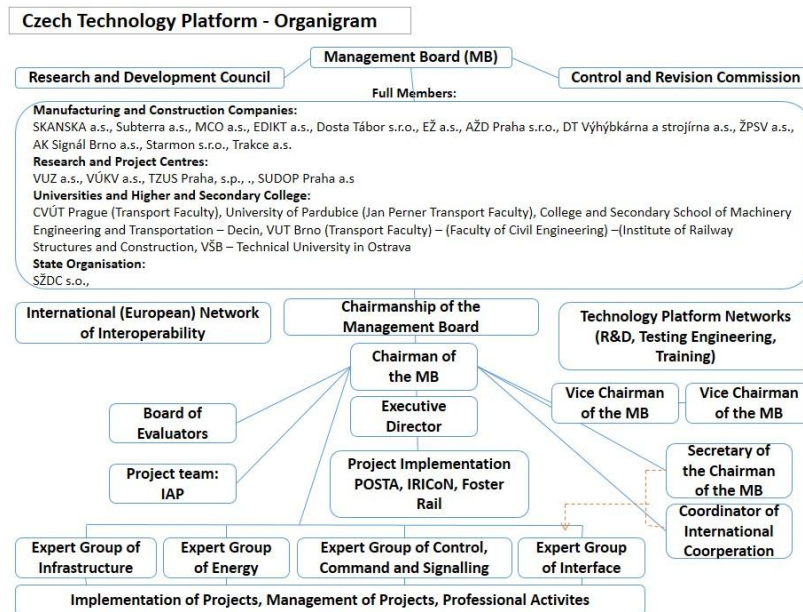


Figure 1 : CZTP Organigram

MEMBERS

Czech Technology Platform embraces 22 representatives of industry and science, acting in the field of rail transport:

- Manufacturing and Construction Companies (13)
- Research and Project Centres (3)
- Universities and Secondary and Higher School (5)
- State Organisation (1)

More details see our website: www.sizi.cz.

KEY DOCUMENTS

Basic documents for determining the role, the position and the strategic plan of CZTP activities are:

- Feasibility Study processed in 2008 to an application for a grant from the Operational Programme Enterprise and Innovations, the Ministry of Industry and Trade
- Strategic Research Agenda (SRA) developed for the Ministry of Industry and Trade in 2009
- Implementation Action Plan (IAP) developed for the Ministry of Industry and Trade to implement the SRA
- Feasibility Study processed in 2012 to an application for a grant from the Operational Programme Enterprise and Innovations, the Ministry of Industry and Trade
- Update of the Strategic Research Agenda (SRA) developed for the Ministry of Industry and Trade in 2012
- Update of the Implementation Action Plan (IAP) developed for the Ministry of Industry and Trade in 2012

Other documents processed by the CZTP that relate to the field of interoperability of railway infrastructure are studies developed for the Ministry of Transport :

- Analysis of the interoperability requirements in relation to the competitiveness of rail infrastructure in the Czech Republic
- Prioritizing the implementation of the interoperability on the Czech railway network in relation to the support of EU funds in the period 2014–2020

R&D Priorities

Consequently, for the CZTP from these above documents imply following priorities in railway research , development and innovation:

- Ensuring the homogenization of the basic parameters of the Czech railway network following the various subsystems of the European railway interoperability with respect to the category of nation-wide railways and TEN-T.
- Related formulation of technical and technological requirements for the Czech unified transport system.
- Determination of the extent of implementation of technical interoperability at the Czech railway network.
- Determination of the successive steps in the implementation of ERTMS on the national track (with the exception of TEN-T) and its further development in the longer term.
- Preparing complex data for decision on the use of ERTMS on the regional railways.
- Determination (formulation) of the conditions , procedures and follow-up measures for the transition to the unified system 25 kV railway network of the country.
- The Czech railway access for persons with reduced mobility (PRM).

The following key objectives follows the necessity of actively addressing issues:

- Protection against stray currents
- Preparation of concept of detection systems

RELATION WITH OTHER MODES OF TRANSPORT / OTHER SECTORS

At the national level CZTP is a member of the Memorandum of Cooperation of Czech Technology Platforms and cooperates with the following relevant TP:

- Czech Technology Platform Road Transport
- Czech Technology Platform on Industrial Safety
- Czech Technology Platform for Biofuels
- Czech Hydrogen Technology Platform
- Czech Technology Platform on Manufacturing Engineering Technology
- Czech Technology Platform Sustainable Energy for the Czech Republic

At European level CZTP Interoperability of Railway Infrastructure collaborates with the Spanish Platform PTFE.

CONTACT:

M.Sc. Bohuslav Dohnal, Executive Director
Czech Technology Platform, Interoperability of Railway Infrastructure
Kodaňská 46/1441
100 10 PRAGUE 10, Vršovice
CZECH REPUBLIC
Tel: +420 234 065 499
E-mail: bohoslav.dohnal@sizi.cz
sekretariat@sizi.cz
Web: <http://www.sizi.cz>

3.3 Factsheet Great Britain

National Technology Platforms or similar bodies existing in the MS/AS

FOSTER RAIL - WP1, task 1.2.

Great Britain

Rail Safety and Standards Board Limited



DESCRIPTION

RSSB provides support and facilitation for a wide range of cross-industry activities including management of the principal rail research programme for Great Britain. RSSB's supports and operates through a wide range of cross-industry working groups and committees.

RSSB is a not-for-profit company created in April 2003 owned and funded by major stakeholders in the railway industry, but is independent of any one party. RSSB has around 250 staff, including experts in a wide range of technical disciplines and other professionals, such as project managers, meeting facilitators and support staff. RSSB is funded by levies on its members and grants for research from the Department for Transport.

MISSION

While each individual organisation is accountable for safety within their undertakings, RSSB plays a key role in the management of system safety.

RSSB's core functions include:

Industry-wide research and development with a broad capability and expertise in areas such as engineering, operations, human factors, risk, workforce development, occupational health, sustainable development and public behaviour.

Measuring safety performance and analysing risk.

Publishing the Railway Group Standards Code and managing its processes that define mandatory engineering and operational requirements in respect of the mainline railway. (The central purpose of RGSs is to enable the different participants in the industry to co-operate safely and efficiently where they need to do so, without having to reinvent the basis of that co-operation every time.) Producing best practice guidance and supporting the industry on interoperability standards.

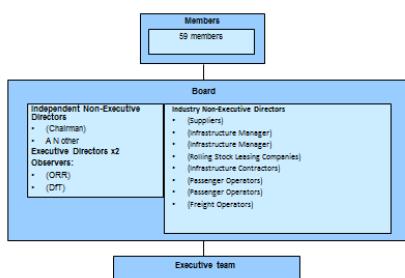
RSSB's functions are interdependent and combine to deliver a package of services to the industry. As a result, RSSB has become

OBJECTIVES

Supporting RSSB's members to deliver a safe, reliable and environmentally friendly railway while offering value for money.

STRUCTURE

Corporate structure



MEMBERS

At the time of writing there are 59 members of RSSB. These comprise:

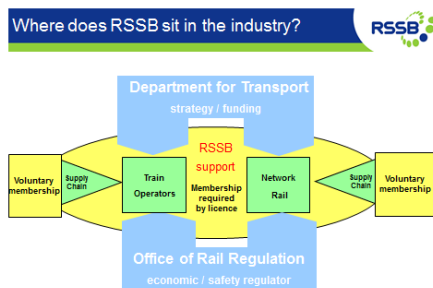
Passenger Train Operators (25), Non-passenger Train Operators (9), Network Rail and other Infrastructure Managers (1), Rolling Stock Owners (3), Infrastructure Contractors (5) and Suppliers (16). More details from our website www.rssb.co.uk.

KEY DOCUMENTS

RSSB publishes a range of documents specifically related to its R&D role, and other documents relating to its wider responsibilities. These include:

- R&D Research Catalogue (quarterly)
- R&D e-newsletter
- R&D Ideas list
- Proposals Register
- Annual Safety Performance Report (GB)
- GB Standards programme
- Information Bulletin
- Learning from operational experience annual report

RELATION WITH OTHER MODES OF TRANSPORT / OTHER SECTORS



CONTACT RSSB Enquiry Desk +44 (0)203 142 5400 or email enquirydesk@rssb.co.uk

Factsheet Lithuania

National Technology Platforms or similar bodies existing in the MS/AS

FOSTER RAIL – WP1, task 1.2.

Lithuania

Competence Centre of Intermodal Transport and Logistics



DESCRIPTION

The activity of CCITL is based on the notion that transport system is one of the most important factors predetermining a success of our state and the rates of its consolidation in the European space as well as the progress of its economy and the living standard of the population. In order to maintain Lithuanian transport system vital efforts of scientists and experts of various spheres are permanently mustered up for its improving and extending.

MISSION

The main research and activity objectives of CCITL are orientated towards the strengthening of intermodality of Lithuanian transport system, emphasizing intermodality as of fundamental significance for developing competitive transport modes. Therefore CCITL task is to ensure fuller integration of the modes offering considerable potential transport capacity as links in an efficiently managed transport chain joining up all the individual services.

OBJECTIVES

The priority is placed on conceptual harmonization and interoperability between different modes and different implementation levels.

STRUCTURE

- **Competence Centre of Intermodal Transport and Logistics (CCITL)** (as managing institution) joined **Lithuanian Intermodal Transport Technology Platform** on 13. 3. 2007.
- **Competence Centre of Intermodal Transport and Logistics (CCITL)** joined the **European Intermodal Transport Association (EIA)** on 15. 3. 2007.
- Since 2007 CCITL has been performing the function of a partner administering the **Lithuanian Intermodal Transport Technology Platform**.

MEMBERS

Lithuanian Intermodal Transport Technology Platform (LITTP) was established in 2007 as a platform for “triangle” cooperation between business, academic structures and political institutions.

BUSSINESS:

- Lithuanian National Carriers Association (LINAFA)
- Lithuanian National Forwarders Association (LINEKA)
- Non-associated transport and logistics companies
- Lithuanian Railways
- Association of Lithuanian stevedoring companies

GOVERNMENT:

- Ministry of Transport and Communication Ministry of Foreign Affairs
- Municipalities of the main Lithuanian cities (Vilnius, Kaunas, Klaipėda, Panevėžys, Šiauliai)

ACADEMIA:

- Competence Center of Intermodal Transport & Logistics of Vilnius Gediminas Technical University (Lead partner of LITTP)

FOSTER RAIL / D1.2 – Developing links and coordination strategies between ERRAC, EU, ETPs and national technology platforms. State-of-the-art

- Klaipeda University (KU)
- Kaunas Technology University (KTU)
- Center for Strategic Studies
- Kauno Nova

Currently nearly 1040 Lithuanian carriers-transport companies are represented at the LITTP.

CONTACT

Competence Centre of Intermodal Transport and Logistics

Vilnius Gediminas Technical University

Saulėtekio al. 11, room 523,

LT–10223 Vilnius

LITHUANIA

Tel.: +370 5 274 5075

E-mail: algirs@vgtu.lt

Factsheet Netherlands

National Technology Platforms or similar bodies existing in the MS/AS

FOSTER RAIL - WP1, task 1.2.

Netherlands

RAILFORUM



DESCRIPTION AND MISSION

Railforum – “The unifying platform for the railway sector in the Netherlands” - is an association and has been established in 1992 as an independant knowledge network supporting about 85 active rail stakeholders (companies and organisations etc).

Some background issues leading to the formation of the Organisation in 1992 were:

- Growth ambition public transport
- Growth ambition rail freight
- Liberalisation / free market on rail
- Political decision: splitting up NS
- Fear of losing knowledge
- Fear of decreasing innovation
- Large group of parties
- Combination of non-profit and private partners
- All partners in the business
- Also new companies
- Unifies the broadest alliance possible
- 80 members and 20 partners (other associations, customer platforms, science)

Mission statement:

- Increase the public value of rail transport
- Freedom of choice of the transport mode, level playing field
- Rail transport as a contribution to environmentally compatible mobility
- Rail transport as a contribution to safer mobility
-

The central aim of the association is sharing knowledge and Information in order to increase the social and economical effectiveness of rail transport.

OBJECTIVES

Main objectives:

- Bringing together all relevant stakeholders (incl. main ports, companies, T&T)
- Sharing knowledge
- Influence on public opinion
- Research agenda
- Innovation agenda
- Offering meetings
- Information, knowledge and exchange of experiences
- Develop new knowledge and opinions
- Offering a platform for innovations
- Customer orientated

The focus is on increasing the pace of (process) innovations. Raiforum offers its services and takes care of the coordination with other sectors, policy and science. RailForum activities exist of frequently organizing meetings and events where the wide array of rail stakeholders meets, discusses and where initiatives are

FOSTER RAIL / D1.2 – Developing links and coordination strategies between ERRAC, EU, ETPs and national technology platforms. State-of-the-art

being taken. Usually these meetings are organised in cooperation with members and partners. Once a year an annual congress is organised in which about 400 guests attending.

Future expectation for RailForum:

- Meeting place, “place to be”
- Exchange of knowledge and opinions
- Joint agenda in rail business
- Impulses for innovations and changing the culture
- Positive attitude rail

STRUCTURE

The organisation consists of:

- 85 members (each member is equal)
- Board with 11 members (consensus)
- Office with 5 employees

Finances:

- Association with active members
- Contribution in money and time
- Each member is equal
- Independent
- Budget ca. € 500.000 each year (85 x € 5950)
- Costs: mostly wages, rent and catering

There is a Governmental Board existing of persons which are actively engaged rail stakeholders. Members of the board can serve a maximum of 2 terms of 3 years. At this moment, the Governmental Board exists of the following persons:

ing. C.A. Tommel Bac., Chairman/director of Keyrail

ir. S.H. van Royen, secretary and accounting director of BAM Rail b.v

drs. W.J. Benschop, director Public Transport of Randstad Stadsgeewest Haaglanden (regional government)

ir. P.M.E. Dirix, director operations ProRail b.v. (Infrastructure manager).

drs.ir. J.M. van den Elzen, chairman of the board of directors of Movares

mevr. Y. van Kraaij-van Voskuyl, account sales executive public transport Atos

ing. L.E. Linders, General-director ALSTOM Transport B.V.

ir. M.C.J. van Roozendaal, CEO NedTrain B.V.

ing. M.W.S. Schaafsma, senior advisor airport development Schiphol Amsterdam Airport

They are being supported by a secretariate led by the RailForum Director Mrs. Corina de Jongh.

MEMBERS

The members of Railforum are organizations who value the social importance of rail transport for passenger transport as well s for freight. At this moment, Railforum has 85 members, The membership consists of operators, infra-managers, forwarders, trans-shippers, construction companies, consultancies, governments and financing institutes.

- 15 non-profit (public services, central, regional)
- 5 logistic service companies
- 7 public transport companies
- 2 alliances
- 35 consulting companies
- 10 industrial companies
- 6 building companies

Below you will find an overview of the present members in alphabetical order; the organisations are usually represented at Directors level:

- ☐ 9292
- ☐ ADSE Consultancy & Engineering Services
- ☐ Alom b.v.
- ☐ ALSTOM Transport B.V.
- ☐ APPM Management Consultants
- ☐ ARCADIS N.V.
- ☐ Arriva Openbaar Vervoer N.V.
- ☐ ASSET Rail BV
- ☐ AT Osborne B.V.
- ☐ Atos
- ☐ BAM Rail bv
- ☐ Bemo Rail BV
- ☐ Bestuur Regio Utrecht
- ☐ BoerCroon
- ☐ Bombardier Transportation
- ☐ Bonder Recycling en Overslag B.V.
- ☐ Brunel International N.V.
- ☐ Capgemini Nederland BV
- ☐ Connexxion
- ☐ CQM B.V.
- ☐ Deltares
- ☐ Dienst Metro, gemeente Amsterdam
- ☐ Dura Vermeer Railinfra BV
- ☐ Edilon)(Sedra
- ☐ Eurailscout Inspection & Analysis B.V.
- ☐ Fujitsu Technology Solutions BV
- ☐ Gemeente Utrecht
- ☐ Gemeentewerken Rotterdam
- ☐ Goudappel Coffeng B.V.
- ☐ Grontmij Nederland B.V.
- ☐ GVB

- ☐ Havenbedrijf Amsterdam NV
- ☐ Heijmans N.V.
- ☐ HP Nederland B.V.
- ☐ HTM Personenvervoer
- ☐ Human Company
- ☐ IBM Nederland B.V.
- ☐ Imtech Traffic & Infra
- ☐ Infraspeed Maintenance B.V.
- ☐ inno-V
- ☐ Inspectie Leefomgeving en Transport
- ☐ InTraffic BV
- ☐ Joulz B.V.
- ☐ Keyrail B.V.
- ☐ KPN Zakelijke Markt CS
- ☐ Lloyd's Register Rail Europe B.V.
- ☐ Max Bögl Nederland B.V.
- ☐ Ministerie van Infrastructuur en Milieu
- ☐ Mott MacDonald NL BV
- ☐ Movares
- ☐ NS Groep
- ☐ Panteia/NEA
- ☐ Pilz Nederland
- ☐ Plurel
- ☐ Pon Logistics bv
- ☐ ProRail b.v.
- ☐ Provincie Gelderland
- ☐ Provincie Noord-Brabant
- ☐ Provincie Zuid-Holland
- ☐ PwC
- ☐ Rail Partner Holland B.V.
- ☐ Railinfra Opleidingen
- ☐ Railinfra Solutions
- ☐ RET N.V.
- ☐ Rijkswaterstaat
- ☐ Royal HaskoningDHV
- ☐ Schiphol Amsterdam Airport
- ☐ Siemens Nederland N.V.
- ☐ Spitzke Spoorbouw bv
- ☐ Stadler Netherlands B.V.
- ☐ Stadsgewest Haaglanden
- ☐ Stadsregio Arnhem Nijmegen
- ☐ Stichting Bodemsanering NS
- ☐ Stork Technical Services
- ☐ STRABAG Rail GmbH
- ☐ Strukton Rail Nederland
- ☐ Swietelsky Rail Benelux B.V.
- ☐ Syntus
- ☐ Thales Nederland B.V.

- ☐ **TNO**
- ☐ **Tribase**
- ☐ **Twynstra Gudde Adviseurs en Managers**
- ☐ **VeoliaTransport Rail BV**
- ☐ **Verebus Engineering BV**
- ☐ **voestalpine Railpro BV**
- ☐ **VolkerRail Nederland bv**
- ☐ **VRS Railway Industry bv**
- ☐ **Zorg van de Zaak**

Besides the above mentioned (app) 80 members, RailForum also has 30 'partners in knowledge. These are non-for-profit organisations which contribute to the exchange of knowledge on rail-oriented topics "Partners in knowledge". These are organisations which cannot be full members for reasons of neutrality (independence) or because these organisations represent a number of parties.

These "partners in Knowledge" are the following:

- ☐ **ACM (Autoriteit Consument & Markt)**
- ☐ **Bouwend Nederland**
- ☐ **CIVOM**
- ☐ **Connekt**
- ☐ **CROW KpVV**
- ☐ **Dinalog.**
- ☐ **Europoint b.v.**
- ☐ **Fietzersbond**
- ☐ **Holland Rail Industry**

- ☐ **Infrasite!**

Besides the 80+ members and about 30 "knowledge partners" RailForum has set up a Network of independant professionals (ZP-Netwerk) which exists of about 50 members. The aim is to bring together professionals who contribute and share their experience, knowledge and creativity in order to innovate rail – and public - transport. They are stimulated to organise meetings in cooperation with railforum, initiate dialogues with active rail stakeholders and to present their innovative and sustainable solutions to operators, infra managers, governmental bodies and others members of Railforum as well as for instance chair Railforum events. Details of these ZP members can be found on the Railforum website.

Furthermore, in 2002 a number of young members of staff from our members has taken the initiative to organise themselves in a network which they named 'de Jonge Veranderaars' – the Young Changers". The network now exists of about 500 young railway professionals Innovaters". They review topics which are within the public attention and try to lobby their ideas for innovation within society. They organise meetings and excursions to study and inestigate all aspects of the secor. They have their own website:

www.jongeveranderaars.nl

Main alliances – national & international:

- ANWB
- Railinfra Opleidingen (academies)
- Science / universities
- Costumer platforms
- The Railway Forum (UK)
- Allianz pro Schiene (D)
- Czech Republic

The direct focus of Railforum is "rail", but they always consider mobility as a whole. All other modes of transport are members of Railforum like the Harbours, Airports, bicycle platforms, car associations etc.

KEY DOCUMENTS

All documents (in dutch) can be found on our website www.railforum.nl

Activities consist of:

- Conferences, seminars, workshops
- Projects
- Excursions
- 'Jonge Veranderaars' network
- Communication, letter, website

Results so far:

- Many visitors, the right level
- Knowledge exchange, open sphere
- Agenda setting unifies
- New processes, innovations (examples)
- Innovations in sustainability through Green Deals with national government
- Innovations in planning, ICT, safety by learning from other branches
- One voice in political debates
- Sharing knowledge by shared websites like www.duurzaamspoor.nl
- Keeping railways integrated
- Positive image

CONTACT

Railforum

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Factsheet Poland

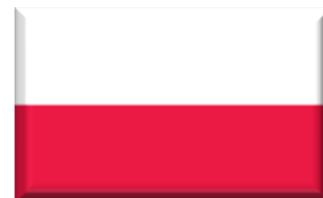
National Technology Platforms or similar bodies existing in the MS/AS

FOSTER RAIL - WP1, task 1.2.

Poland

Polish Rail Technology Platform

Polska Platforma Technologiczna Transportu Szynowego



DESCRIPTION

The Polish Rail Technology Platform was established in 2005 to protect the interests of Polish operators and service providers, while following in the footsteps of similar platforms in other countries in Europe. The platform aims to promote the use of state-of-the-art technology in the sector.

The Polish Rail Technology Platform aims to support the development of rail transport in Poland in line with the National Development Plan, and to help meet the requirements of the EU's transport policy.

The Polish Rail Technology Platform works with EU institutions dealing with rail transport. PPTTS officials take part in the work of the European Rail Research Advisory Council (ERRAC). The Polish Rail Technology Platform has for three years worked as part of the Technical Specifications for Interoperability project, which is being carried out by the European Association for Railway Interoperability (AEIF). For a year, this work has been conducted as part of the European Railway Agency (ERA).

PPTTS partner institutions are members of European networks of excellence, centers of excellence and research projects concerning rail transport, including the European Rail Research Network of Excellence (EURNEX), the Seamless Public Urban Rail Transport (SPURT), and the Era-Net Transport (ENT) national transport research program.

One of the institutions that came up with the idea to establish the Polish Rail Technology Platform was the Association for Rail Transport Interoperability (SIRTS), a member of the Union of the European Rail Industries (UNIFE).

PPTS members also take part in the work of the European Rail Research Advisory Council, in particular in projects included in its Strategic Rail Research Agenda 2020.

Polish Rail Technology Platform (PPTTS) embraces representatives of industry and science, acting in the field of rail transport:

- Rolling stock
- Infrastructure
- Transportation
- Services

MISSION

Areas of activities:

- **Future Vehicle Technologies**
 - Development of components and vehicles with alternative propulsion system for different application areas and vehicle classes.
 - Development of components and vehicles with alternative propulsion systems for all land transport modes.
 - System optimization of propulsion systems with alternative fuels.
- **Traveller of the future**
 - Information and Services for Users
 - Requirements of Service Providers and Infrastructure Managers

OBJECTIVES

- **Collaboration with European Rail Research Advisory Council (ERRAC)**
 - o Sector development strategy
 - o Policy and legislation towards innovations
 - o Development of modern technologies for rail transport
 - o Strategic research program
 - o Raising the level of competitiveness of the Polish industry in the area of railway transport
- **Promoting the innovative character of rail transport development**
- **Bridge between the science and the industry in field of rail transport**
 - o Initiating and conducting scientific and technological research
 - o Competitive and market surveys
 - o Commercializing the scientific solutions
- **Knowledge & communication**
 - o Information
 - o Training
 - o Participation in international organizations

STRUCTURE

Steering Committee

Chairman of the Steering Committee

Chairman of the Programme Council

Members of the Steering Committee

Coordination and secretariat are exercised by the Silesian University of Technology in Katowice

MEMBERS

In a bid to spur the development of rail transportation in Poland, a group of institutions and companies has set up a research and development consortium called the Polish Rail Technology Platform (PPTTS).

The consortium brings together research centers, institutions and companies working for the needs of the rail transportation sector.

Platform membership composition:

- Rail industry 18
- Services 3
- Rail operators 4
- Scientific bodies 4
- Consultants and branch associations 4

CONTACT

Coordinator:

Politechnika Śląska, Wydział Transportuul.

Krasińskiego 8

40-019 Katowice

POLAND

<http://www.polsl.pl/>

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Factsheet Slovakia

National Technology Platforms or similar bodies existing in the MS/AS

FOSTER RAIL – WP1, task 1.2.

Slovakia

Spoločnosť PSKD – prevádzka a stavby koľajovej dopravy
Company “PSKD” – Operation and Construction of Rail Transport

PSKD

Prevádzka a stavby koľajovej dopravy



DESCRIPTION

PSKD Company – Operation and Construction of Rail Transport is an independent, non-profit and voluntary association of rail transport experts from technical universities, railway companies, city transport companies and from research, development and design companies. The association was established in 2001 on principle of voluntary membership, common interests and goals. It doesn't have a legal entity according to Code of Commerce or Civil Code. It has a form of a club. The main objective is, on high professional level, to create space for analysis, discussions and solutions of highly professional level regarding development of railway and municipal rail transport, solving actual operation and maintenance problems as well as qualitative and progressive preparation and realization of rail transport constructions.

MISSION

The main goals of the association are interconnection of theory and practice, solving matters of railway and urban rail transportation and its enlightenment and development in Slovakia.

OBJECTIVES

Goals and Ambitions of PSKD:

- to be a high-quality platform for interconnection of theory with practice,
- to support research and development in the field of rail transport and transport in general and its application into practice,
- to be a determining source of ideas and integration of railway, urban, and other rail transport in Slovakia,
- to make further enlightenment for railway and urban rail transport as the most ecological, the safest, high-capacity, and the fastest method of transportation and its integration in cities, regions, states and the EU,
- to be a high-quality and opinion-making advisor for railway companies, transportation companies, other state organisations and the Ministry of Transport, Construction, and Regional Development in the field of railway and urban rail transport, in the field of transportation policy of the state and at the analysis of the state and at the creation of development programs and strategy of transportation in Slovakia.
- to create creative atmosphere for discussion and for solving problems in operation and in maintenance,
- to initiate implementation of technical and technological novelties into operation, but mainly into preparation and realisation of modernisation projects of railway and urban transport infrastructure and modernisation of mobile means,
- to take part in the development and increase of university education quality by co-operation with selected universities on the level of professors and students, to increase their motivation by lectures from practice, internships, and excursions.

STRUCTURE

Company bodies:

General meeting of the association members – supreme body of the association

Secretariat of the company – executive body of the company:

Company executive: Head of Secretariat

MEMBERS:

- *Železnice Slovenskej republiky, Bratislava*

- *Železničná spoločnosť Slovensko, a.s. Bratislava*
- *Železničná spoločnosť Cargo Slovakia, a.s. Bratislava*
- *Žilinská univerzita v Žiline*
- *Stavebná fakulta Slovenskej technickej univerzity v Bratislave*
- *Fakulta architektúry Slovenskej technickej univerzity v Bratislave*
- *Stavebná fakulta Technickej univerzity v Košiciach*
- *Technická univerzita v Braunschweigu, Germany*
- *Dopravný podnik Bratislava, a.s.*
- *Dopravný podnik mesta Košice, a.s.*
- *Výskumný ústav dopravný, a.s. Žilina*
- *Bratislavská integrovaná doprava, a.s.*
- *ORID, s.r.o., Košice*
- *REMING CONSULT a.s., Bratislava*

KEY DOCUMENTS

Best of the significant activities from the year 2001:

- **Professional Commission for the involvement of rail transport into ITS of Bratislava and its region** (11 / 2002 - 02 / 2003).
- **TEN-T project: "Interconnection of corridors IV and V in Bratislava territory"**(years 2003 - 2005).
- **Slab track** - enforcing its utilization in ŽSR infrastructure.
- **Unified catenary system in ŽSR network** - change from 3 kV DC to 25 kV AC in the whole ŽSR network.
- **Initiative ISK 200** (years 2007 - 2009) - series of 6 workshops to assist in revising the Act on Railways and its executive regulations including the incorporation of EU standards with the aim to achieve the increase of the speed on the modernized lines at $v = 200$ km/hours only by adjusting the legislation.
- **Revitalization, modernization and new concept of railway transshipment area Čierna nad Tisou** - initiative (2 workshops) to speed up the removal of ecological load of area and for determining the development strategy of the transshipment station in the concept of the whole eastern Slovakia railway transshipment area.
- **New approach of use of premises of railway station buildings and spaces** - resources for funding their redevelopment and commercial use (pilot revitalization project of railway station Bratislava - filiálka).

RELATION WITH OTHER MODES OF TRANSPORT / OTHER SECTORS

PSKD company is one of the professional platforms where experts in various modes of transport discuss their interconnectedness and interdependency, and also about the possibilities of their interconnection and integration, for example, via terminals of integrated transport, combined transport and the like.

CONTACT

PSKD – Operation and Construction of Rail Transport

Trnavská cesta 25, 831 04 Bratislava, Slovak Republic

- *Web: <http://www.pskd.sk>*
- *E-mail: pskd@reming.sk , podmanický@reming.sk*
- *Tel.: +421 2 55 56 61 61.*
- *Fax: +421 2 55 56 61 44.*

Factsheet Spain

National Technology Platforms or similar bodies existing in the MS/AS

FOSTER RAIL - WP1, task 1.2.

Spain

Spanish Railways Technological Platform

Plataforma Tecnológica ferroviaria española (PTFE)



DESCRIPTION AND MISSION

The **Spanish Railways Technological Platform (PTFE)** is an industry-led tool at the service of the railway sector, set up to define a “long-term vision” and the “Strategic Research Agenda”, with the aim of achieving the scientific and technological advances required to ensure the competitiveness, sustainability and growth of the Spanish railway sector. Its main mission is to align the strategies of the various agents, concentrate R&D and innovation efforts, and reduce the fragmentation in research fields. Since its creation in 2005 it **has evolved from a more “project oriented” scope to a “market uptake” approach**, working intensively in opening new regional and activity business areas, without missing its sectorial representation activities.

At national level, the PTFE works closely together with the technological platforms of other transport modes and with those with which the railway sector may benefit from cooperation, to facilitate the analysis of cross-modal issues and detect possibilities for technology transfer.

The **technical secretariat** of the Spanish Railways Technological Platform is **performed by the Spanish Railways Foundation (FFE)**, a non-profit public foundation constituted on the 20th of February 1985.

The PTFE is supported by the **International Innovation Unit (UII)** of the Spanish Railways Foundation in developing its international promotion and coordination with the European and International R&D sphere. In this framework, the PTFE participates actively at the **European Rail Research Advisory Council (ERRAC)** and is available to provide support to the FFE in their work done in the **International Rail Research Board IRRB** of the UIC.

OBJECTIVES

The PTFE pursues the following objectives:

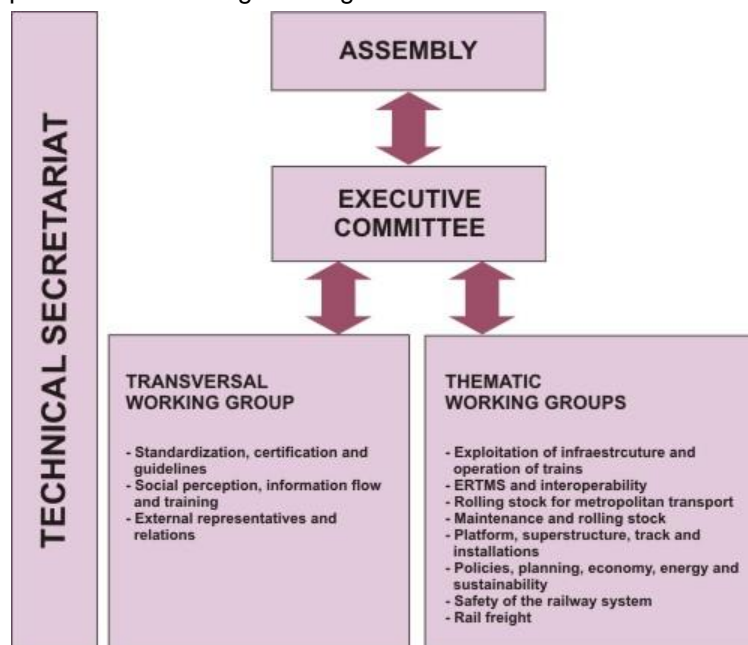
- Define the R&D and innovation priorities for the Sector.
- Promote R&D and innovation, coordinate public and private investments.
- Integrate R&D and innovation agents (joint projects, technology transfer and flow of information).
- Identify R&D and innovation projects which are consistent with the objectives of the PEIT (Spanish Strategic Plan for Infrastructures and Transport).
- Promote joint projects between the different elements of the Science-Technology-Enterprise system which may fit into national and European calls for proposals.
- Extend and optimise the way in which companies use public and private research infrastructures.
- Identify training shortcomings and coordinate training plans.
- Advise public administrations and cooperate with them in the development of sector-specific policies and other actions as required.
- Promote intermodality between railways and other forms of transport, so as to contribute to sustainable transport.
- Promote the participation of Spanish companies in European consortia.
- Defend Spanish interests through coordination actions with ERRAC.
- Contribute to the development of Spanish research centres and groups which are competitive at the European level.

STRUCTURE

The governing bodies of the PTFE are:

- The **General Assembly**, constituted by all the members of the platform and meeting on a yearly basis with the mission of guiding the PTFE and deciding on its actions;
- The **Executive Committee**, whose mission is to coordinate and manage the Platform. It is integrated by the representatives of the Spanish National Ministries of Economy and Competitiveness and Public Works, ADIF, RENFE OPERADORA, FFE and the leaders and co-leaders of the PTFE working groups.
- The **PTFE's Working Groups**. The members of the platform can propose the creation and join the working groups of their area of interest. Since 2005 the number and thematic of the working groups has vary depending on the needs of the sector and the new challenges and opportunities faced.
- The **Technical Secretariat**: the Spanish Railways Foundation provides technical, organizational and administrative support to the PTFE.

Hereafter, a graphic representation of the governing bodies of the PTFE is shown:



Key documents



containing
Available in



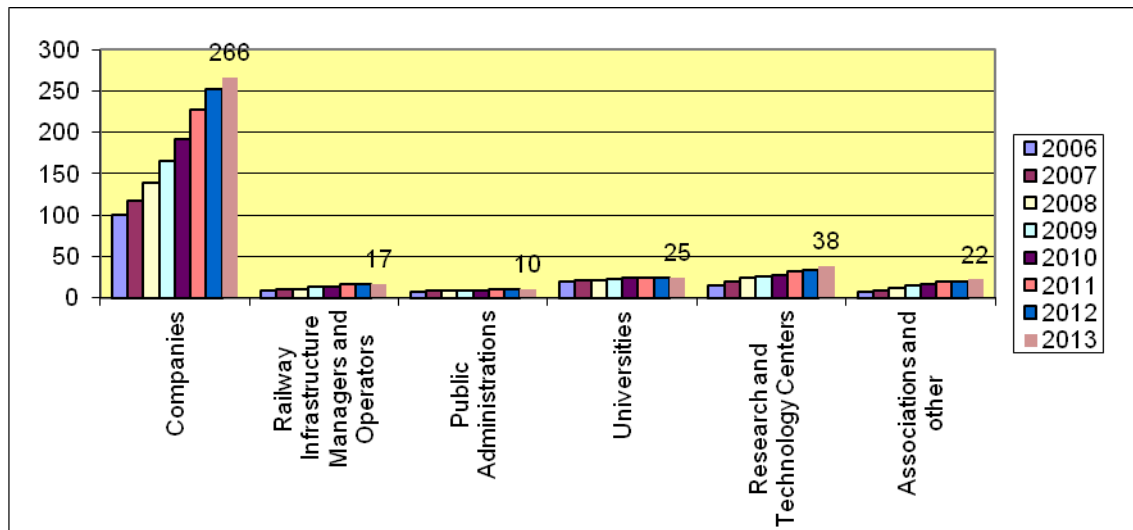
The Spanish Railway Sector defines through the PTFE the “Strategic Research Agenda for the Railways Sector”, which is permanently being updated. There has been a continuous work in this sense since 2008. The last working document is 2013: **Technological, scientific and innovation priorities** of the Spanish Railway Sector. Vision 2050

During the PTFE Annual Assembly 2012 the following document was presented “R&D Capacity Catalogue of the Spanish Railway Sector”, information as key entities, projects and contact details.

English. To download go to: <http://goo.gl/E4F0E>

MEMBERS

The number of entities member of the Spanish Railways Technological Platform has grown continuously since its creation in 2005, counting nowadays with 371 members (figure of December 2013), comprising the vast majority of the Spanish Railway Sector Entities involved in R&D. The distribution between type of entity is, according to the number, as shown in the following figure:



CONTACT

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www.ptferroviaria.es

Technical Secretariat PTFE

Fundación de los Ferrocarriles Españoles

C/ Santa Isabel, 44

28012 Madrid

4. Database of similar or related bodies

In this section you will find similar bodies, which do not meet definition of an NTP, but that have a similar relation with the rail R&D national schemes.

Factsheet Belgium

National Technology Platforms or similar bodies existing in the MS/AS

FOSTER RAIL - WP1, task 1.2.

Belgium

Brussels Studies Institute – the platform for research on Brussels



Database for research for the Brussels Capital regions – there is not a specific database on rail research but this data base includes information and research about Rail technologies

DESCRIPTION

It is a database developed by The Brussels Studies Institute (BSI) which is a permanent academic structure, emanating from a cooperation agreement between the three Brussels universities: ULB, VUB & Saint Louis University.

It received a start-up grant from the Government of the Brussels Capital Region in 2012

<http://www.bsi-brussels.be/en/bsi/recherches/>

MISSION

The BSI functions as a research platform enabling contact and coordination between academic research teams and researchers focusing on the study of Brussels, with particular attention to the social and human sciences

OBJECTIVES

As such, the BSI intends to intensify and coordinate academic research on Brussels as well as to disseminate knowledge on Brussels by engaging with political decision makers, civil society and citizens in an interactive way

STRUCTURE

BSI Board

Chairman

•Prof. Dr. Serge Jaumain (ULB) - [sjaumain\(at\)ulb.ac.be](mailto:sjaumain(at)ulb.ac.be)

Vice-Chairmen

•Prof. Dr. Eric Corijn (VUB) - [eacorijn\(at\)vub.ac.be](mailto:eacorijn(at)vub.ac.be)

•Prof. Dr. Michel Hubert (USL) - [hubert\(at\)fusl.ac.be](mailto:hubert(at)fusl.ac.be)

Members

•Prof. Dr. Stefan De Corte (VUB-EHB) - [sdecorte\(at\)vub.ac.be](mailto:sdecorte(at)vub.ac.be)

•Prof. Dr. Jean-Michel Decroly (ULB) - [jmdecrol\(at\)ulb.ac.be](mailto:jmdecrol(at)ulb.ac.be)

•Prof. Dr. Jean-Louis Genard (ULB) - [jgenard\(at\)ulb.ac.be](mailto:jgenard(at)ulb.ac.be)

•Prof. Dr. Rudi Janssens (VUB) - [Rudi.Janssens\(at\)vub.ac.be](mailto:Rudi.Janssens(at)vub.ac.be)

•Prof. Dr. Delphine Misonne (USL) - [misonne\(at\)fusl.ac.be](mailto:misonne(at)fusl.ac.be)

•Prof. Dr. Nicolas Bernard (USL) - [bernard\(at\)fusl.ac.be](mailto:bernard(at)fusl.ac.be)

MEMBERS

Universities based in Brussels or Belgian universities with faculties based in Brussels

Factsheet Croatia

National Technology Platforms or similar bodies existing in the MS/AS

FOSTER RAIL - WP1, task 1.2.

Croatia

Savez na Zeljeznizu – Pro-rail Alliance Croatia



DESCRIPTION AND MISSION

Pro-Rail Alliance Croatia is non-for-profit organization off all interested for headway of the rail traffic in Croatia. The Statutes date from 2012.

OBJECTIVES

The mission of the Pro-Rail Alliance Croatia has been described as follows:

- Promoting the usage of rail traffic in Croatia
- Applying the highest European and World rail standards especially the ones concerning Sustainable development
- Increasing the market share of the rail traffic in Croatia
- Helping to achieve the satisfaction of all the customers that use rail transport

The Pro-Rail Alliance Croatia wants the public to be informed about the rail traffic in Croatia and to put it a position to be a preferable means of transport.

- They want to inform the public about railway traffic in Croatia and make it a desirable choice for transport of goods and traveling alike
- They want to inform all sides, business and work wise related in the system of railway traffic, about world trends so they can reach their maximum in the field of raising quality of services and using technological development in railway sector
- They want to encourage scientific research which is in tune with our mission, and also secure that it is unison with highest accomplishments in railway sector, but also to face applicability in practice and concrete actions that arise from these studies

STRUCTURE

The organisational team consists of:

- Branko Kreš, president
- Branimir Jerneiĉ, vice-president
- Slavko Štefiĉar, main coordinator
- Zdenka Vuĉiĉ, coordinator
- Ante Kleĉina, professional associate

MEMBERS

At the moment of preparing this sheet, there were 43 members from many different rail stakeholders:

1. AGIT d.o.o.
2. Altpro d.o.o.
3. C.I.O.S. d.o.o.
4. Ćišćenje i njega putniĉkih vagona d.o.o.
5. DIV d.o.o.
6. Fakultet prometnih znanosti
7. HŤ Holding d.o.o.

- 8.HȚ Cargo d.o.o.
- 9.HȚ Putnički prijevoz d.o.o.
- 10.HȚ Infrastruktura d.o.o.
- 11.HȚ Vuća vlakova d.o.o.
- 12.Industrooprema d.o.o.
- 13.Končar KEV d.d.
- 14.Končar KET d.d.
- 15.Luka Rijeka d.d.
- 16.Luka Šibenik
- 17.Luka d.d. Split
- 18.OVV d.o.o.
- 19.Petrokemija d.d.
- 20.Prućne građevine d.o.o.
- 21.RPV d.o.o. Slavonski Brod
- 22.Strabag d.o.o.
- 23.RVR d.o.o.
- 24.RȚV Čakovec d.o.o.
- 25.RȚV Bjelovar d.o.o.
- 26.Samplast d.o.o.
- 27.Strojna obrada Kordnja
- 28.Šela
- 29.TȚV Gredelj d.o.o.
- 30.Viševica Komp d.o.o.
- 31.Pravnička udruga țelj. Društava
- 32.Ergonomska udruga HȚ
- 33.Ekoturistiko Brdovec
- 34.Sindikati țeljezničara Hrvatske
- 35.Sindikati teh. preg. vag. i vlakova HȚ
- 36.Sindikati branitelja i invalida domovinskog rata HȚ
- 37.Sindikati infrastrukture HȚ
- 38.Udruga klaster proizvođača țelj. inf.
- 39.Udruga “Plavo svjetlo”
- 40.KUD “Țeljezničar” Zagreb
- 41.IPC Dunav Jadran
- 42.Klub ljubitelja țeljeznice Zagreb
- 43.Udruga Forum 50 +

KEY DOCUMENTS

The Pro-Rail Alliance Croatia mentions as some of their projects:

- celebrating 150 years of the first railway line in Croatia
- Industrial track state fund
- Intermodal passenger transport
- Intermodal freight transport
- Forming a news website with rail news from the region
- Working on international projects like
 - [USEmobility – EU project](#)

- [ACROSSEE – EU project](#)
- [LivingRAIL – EU project](#)
- [Integrated passenger transport \(IPP\)](#)
- ACT4RAIL
- Integrated passenger transport in Croatia –20. 5. Čakovec, Croatia
- Integrated freight transport in northern Croatia –17. 6. Čakovec, Croatia
- and many others.....
- Brochures such as:



Brochures



[Mobilnost građana s primjerima iz Varaždinske županije](#)

Bruchure is clearly showing quality solutions i local rural, but also urban and suburban public transport of passengers based on integrated principle. Alongside integrated passenger transport, in this brochure is presented and part of research of the local transport of passengers, carried out in Varazdin County during the 2010. and 2011.



[Revitalizacija industrijskih kolosijeka](#)

What is the situation with industrial tracks in Croatia, and how important is the cargo transport and how to manage them in the future.

CONTACT

Post address: SZZ, Trnjanska 11F, 10000 Zagreb, HRVATSKA

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4.3 Factsheet France

National Technology Platforms or similar bodies existing in the MS/AS

FOSTER RAIL - WP1, task 1.2.

France

There is not a Railway Technology Platform in France



DESCRIPTION

The nearest institution coping with these issues in France is PREDIT, which is currently in a process of transformation from a funding program to a platform for the coordination of the public research funds dedicated to the surface transport. It should coordinate at a strategic level the funding managed by different ministries and agencies

Currently, PREDIT is a programme **for the funding of** research, experimentation and innovation in land transport, started and implemented by the ministries in charge of sustainable development, transport, research, and industry, three agencies ADEME, ANR and OSEO. By stimulating cooperation between public and private sector, this programme aims at encouraging the creation of transportation systems that would be economically and socially more effective, safer, more energy saving, and finally more respectful of Man and environmentally-friendly.

KEY DOCUMENTS

<http://www.predit.prd.fr/predit4/english>

Factsheet Germany

National Technology Platforms or similar bodies existing in the MS/AS

FOSTER RAIL - WP1, task 1.2.

Germany



DESCRIPTION

In Germany, there are no sector-led stakeholder institutions which develop strategic research agendas for transport research, in the way national technology platforms do.

As a rule, national ministries which provide funding for research in Germany rely on the support of project management agencies – so-called “Projektträger” – in the development and implementation of their funding programmes.

These agencies possess expertise in the corresponding fields of research and also act as interfaces between the ministries and the relevant stakeholders. When deemed necessary, the agencies often gather input from stakeholders within the framework of ad hoc workshops, advisory board meetings, and conferences – typically during periods when new funding programmes or initiatives are being developed.

KEY DOCUMENTS

A list of the “Projektträger” can be found here (in German): <http://www.ptnetz.de/ptlist.html>

CONTACT

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david.doerr@de.tuv.com

Factsheet Hungary

National Technology Platforms or similar bodies existing in the MS/AS

FOSTER RAIL - WP1, task 1.2.

Hungary

Clean Air Action Group - (CAAG)



DESCRIPTION AND MISSION

CAAG is a national federation of 128 Hungarian environmental NGOs set up in 1988. The CAAG works mainly on the greening of:

- the state budget
- transport
- energy
- urban management and urban development
- chemical policy

OBJECTIVES

Types of activities of the CAAG are:

- research
- environmental counseling
- legal aid
- awareness raising –press–campaigns–public forums
- proposals for decision-makers

Activities:

CAAG and HTC have been campaigning to save railway branch lines. In 2006 government planned to close 28 branch lines (yellow colour). Finally it closed 14 lines. In 2008 the government planned to close all remaining branch lines (yellow and light blue colors). Because of nationwide protests (in which CAAG and HTC played an important role) it did not close any of them. However in 2009 it closed 24 lines of 830 km. We are working now that the new government to be set up in May 2010 reopen and modernize most of these lines.

Projects:

CAAG prepared several studies on the costs of transport, including environmental and health costs: „Environmentally Harmful Subsidies in the Hungarian Economy” Financed by the Hungarian Ministry of Environment and Water and the European Commission’s PHARE Program

CAAG's also has organised the campaign: "FREIGHT: FROM ROAD TO RAIL", funded mostly by the Oak Foundation.

Also:

Advertisements:

- Television (30 second spot)
- Newspapers
- Giant posters ; 300 billboards on the roads in Hungary
- Small posters in metro

Letters to:

- all mayors in Hungary (3200)
- all members of the Parliament
- ministers

Wide press coverage: Conference on truck traffic organised by CAAG in the House of the Members of Parliament

Future activities of the CAAG:

Further activities of **HTC** in regional rail promotion issues:

Publishing **map of Hungarian rail network**,

Publication and conferences on **Budapest and its suburbs'** rail public transport development,

Publication and meetings, events on **regional transport cooperation** along the Ipoly – Ipeľ river, between **Slovakia and Hungary**. Bridge and rail line reconstruction plans and projects.

Round tables, conferences on **regional rail schemes'** opportunities in Hungary.

Projects supported by EU and other institutions, sources

Cooperation with local partners –Association of Municipalities with railway lines

STRUCTURE

*The CAAG works closely together with the **Hungarian Traffic Club (HTC)** - founded in 1991. Member of CAAG and T&E - Support of environmentally sound transport, communication, public awareness, lobby activities. Website: www.mkk.zpok.hu*

CAAG and HTC have been cooperating with Allianz pro Schiene. With the help of Allianz pro Schiene 3 publications were translated and published in Hungarian.

CONTACT

Office: 1081 Budapest, Üllői út 18. I. 9/A., Hungary

Mailing address: Budapest, Pf. 1676, HU-1465, Hungary

Phone: +36 1 411-0509

Website: www.levego.hu/en email contact: levego@levego.hu

Factsheet Iceland

National Technology Platforms or similar bodies existing in the MS/AS

FOSTER RAIL - WP1, task 1.2.

Iceland

No formal TP for rail exists



DESCRIPTION

No railway exists in Iceland. However, every now and then the feasibility of rail transport is investigated. At present, a passenger railway between Keflavik airport and the capital area is being investigated. Further information may be available at The Keflavik Airport Development Corporation or Kadeco, <http://www.asbru.is/english/kadeco>

Factsheet Ireland

National Technology Platforms or similar bodies existing in the MS/AS

FOSTER RAIL - WP1, task 1.2.

Ireland



DESCRIPTION

No Irish Rail Technology Platform –

Department of Transport, Tourism and Sport (DTTAS) is the main government for all rail related issues.

MEMBERS

Iamrod Éireann

Railway Procurement Agency

Railway Safety Commission

KEY DOCUMENTS

[Dublin Light Rail Sustainability Plan 2011 to 2015.pdf](#)

[Statement of Strategy 2011-2014.PDF](#)

RELATION WITH OTHER MODES OF TRANSPORT / OTHER SECTORS

/

CONTACT

Contact names:

Dr. Bob Flynn National Contact Point and National Delegate to the Smart, Green and

Integrated Transport Challenge Horizon 2020 Transport. Bob.flynn@enterprise-ireland.com

Mr. Bernard Kiernan Power & Systems Manager Railway Procurement Agency. bernard.kernan@rpa.ie

Mr. Peter Carney - Public Transport Regulation PeterCarney@dttas.ie

Factsheet Italy

National Technology Platforms or similar bodies existing in the MS/AS

FOSTER RAIL - WP1, task 1.2.

Italy



DESCRIPTION

There's no National Technology Platform for rail in Italy.

CONTACT

(General contact details of the NTP, including web, and the contact details of a person that can provide further information)

Sandra Bozzoli- NCP Transport Italy

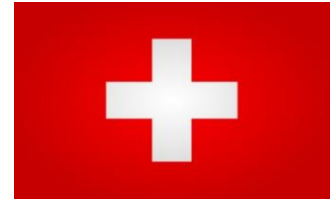
bozzoli@apre.it

Factsheet Switzerland

National Technology Platforms or similar bodies existing in the MS/AS

FOSTER RAIL - WP1, task 1.2.

Switzerland



DESCRIPTION

At the moment there is nothing similar as a NTP for Switzerland. There are a few individual approaches as e.g.

- A fund for innovation (all modes of transport) coordinated at ARE (National Spatial Development) close to Ministry of Transport
- Initiatives of companies as SBB with a 5L-concept
- Initiative of BLS in developing a competence centre for railway tracks
- Universities and colleges starting individual innovation & research programs (St. Gallen, Zurich, Winterthur, Fribourg...)

There is a discussion being held inside the board of VOEV (Association of Swiss Transportation) of creating a platform of all involved stakeholders in R&D&I for transportation.

CONTACT

Jürgen Maier-Head of International Affairs

BLS

juergen.maier@bls.ch

Factsheet Sweden

National Technology Platforms or similar bodies existing in the MS/AS

FOSTER RAIL - WP1, task 1.2.

Sweden



There are 4 railway competence centers in Sweden covering engineering, operational and business aspects of the Swedish railway system. The primary mission for all these centers is to undertake research on relevant questions that can be formulated as academic research projects. The projects often involve enrollment of PhD students. The centers are:

Railway group at KTH

- System approach with focus on vehicles and their interaction with the infrastructure
- Market, operational and commercial research

Charmec www.charmec.chalmers.se

Railway mechanics related research carried out in the “thematic areas”

- Train-track interaction
- Noise and vibrations
- Materials and maintenance
- Systems for monitoring and operation

Luleå Railway Research Center www.ltu.se/centres/jvtc

Maintenance, operations and asset management with a focus on heavy haul in Nordic conditions

Capacity in Railway Traffic – KAJT (homepage only in Swedish)

An industry programme where Trafikverket and a number of research providers cooperate around research on how to better optimize operational train management.

Railway group at KTH



DESCRIPTION

KTH Railway Group was formed in 1988 as an informal organization to support and coordinate expertise in the area of railway technology at KTH. Since 1996, the Railway Group is a formal research and development centre in rail technology at KTH. The main tasks are research, higher education at undergraduate and postgraduate level, and training for employees in the railway field

MISSION

The mission of the railway group is to maintain and develop railway engineering expertise with a focus on vehicles and their interaction with the infrastructure, infrastructure design especially railway bridges, electric traction systems and power supply, market, operational traffic planning and economics. The strength of the railway group is that it represents a system based knowledge approach to the rail business. The railway group is a research school and a primary task of the group is to educate PhD students and also to further educate practitioners.

OBJECTIVES

Develop the railway system based on a system analysis to improve competitiveness compared to other modes of transport. The already low energy consumption of railway operation shall be further reduced so that railways maintain the position as most environmentally friendly mode of transport.

STRUCTURE

The railway group is organized as a research centre at KTH. It has a director and a board with representatives from the stakeholders. Trafikverket and Bombardier are 2 of the bigger organizations on the board.

MEMBERS

Bombardier, Trafikverket, Stockholms public transport authority, SJ, Vectura, Interfleet, representatives from disciplines at KTH.

KEY DOCUMENTS

For the current contract period 2013-2016 an operational plan has been developed.

Within “forum for innovation inom transportsektorn” two research agendas were developed:

- Green freight trains
- Nordic High Speed

RELATION WITH OTHER MODES OF TRANSPORT / OTHER SECTORS

Close contact to ECO2 Vehicle Design Vinn Excellence centre at KTH

Very close contact also to the KTH Transport Platform

CONTACT

Director: Sebastian Stichel, Stichel@kth.se, +46 8 790 7603

<http://www.kth.se/sci/centra/railway>



Chalmers

CHARMEC is a Centre of Excellence in Railway Mechanics established at Chalmers University of Technology. Although railway research has been carried out since 1987, the start date for CHARMEC can be said to be when the formal agreement was signed at The Swedish National Board for Industrial and Technical Development (NUTEK) in Stockholm on 7 July 1995.

The three parties involved in CHARMEC are:

- **Chalmers University of Technology**
- **Trafikverket** the Swedish Transport Administration.
- **The Industrial Interests Group** (Abetong, Bombardier, Faiveley, Green Cargo, Interfleet, Lucchini, SJ, SLL, SweMaint, voestalpine and ÅF)

From the start in 1995 the responsibility to manage the Swedish Competence Centres Programme belonged to NUTEK and later [VINNOVA](#). VINNOVA's administrative involvement in CHARMEC ceased by 30 June 2006 and its role was then taken over by Banverket (now Trafikverket).

More information is provided on the CHARMEC webpage where a triennial report that summarizes the research in 2009–2012, and a list of all published literature until December 2012 is available

Goals

Within its area of competence, the Centre works for the long-term build-up of knowledge that is relevant to the needs of the industry. The choice and orientation of the individual research projects are being decided on the basis of overall assessments of

- Technology
- Economy

FOSTER RAIL / D1.2 – Developing links and coordination strategies between ERRAC, EU, ETPs and national technology platforms. State-of-the-art

- Safety
- Environment

The overall goal of the Centre is to

- achieve increased quality in railway transportation
- lower production, maintenance, operational and environmental costs

The interaction of various railway mechanical components is given special consideration.

Specific Goals

- life-cycle optimized components
- systems for track structure and running gear

The research should result in e.g.

- slower degradation of ballast
- increased operational life of sleepers and pads
- improved track alignment stability
- reduced rail and wheel deterioration
- lower levels of vibration and noise in trains and tracks and their surroundings
- improved systems for monitoring and operation of bearings, brakes and wheels etc

National and international cooperation with parallel and supporting competences will continue and will be increased.

RELATION WITH OTHER MODES OF TRANSPORT / OTHER SECTORS

All researchers at CHARMEC do research and/or cooperate with researcher in other modes of transportation (road, air, sea).

CONTACT

Director: Anders Ekberg, anders.ekberg@kth.se, +46 31 772 3480

Homepage: <http://www.chalmers.se/charmec>

ANNEX B – Report Part B - Enquiry into the national transport policies, rail policies and rail research priorities

1. Questionnaire

QUESTIONNAIRE 2

Reflecting the situation of the organisation of railway research and its priorities at national level

Introduction

FOSTERRAIL – the FP7 EU funded - project supports ERRAC - the European Rail Research Advisory Council to the European Commission. The project which started in may 2013 will deliver a Rail Business Scenario, an updated SRRIA - Strategic Rail Research & Innovation Agenda - as well as updated Roadmaps describing and planning the rail research priorities between the near future and 2050.

WP1 deals both with the cooperation with the **European Technology Platforms** in the other modes of surface transport as ERTRAC – on Road transport - and Waterborne – on shipping - as well as with cooperation and coordination between the activities at a European level and those at a national level. A so-called Technology Platform gathers all relevant stakeholders from a certain area such as Rail: operators, infra-managers, academia, user groups, supply industry, representatives of MS etc.

This questionnaire is meant to gather information dedicated to understanding how the railway research is organised at national level in your country. It includes the identification of the national transport and especially railway related policy, strategic national railway research objectives and priorities as well as making available information on their developments and results.

On behalf of the partners of the FP& FOSTERRAIL project as well as on behalf of all ERRAC members I would like to ask you to please complete this questionnaire and send it back to me before 26 February 2014. Thank you very much for your support!

Please return to:

Dennis Schut – FOSTERRAIL project Coordinator
schut@uic.org (www.uic.org and www.errac.org)

UIC – International union of Railways
53. Avenue des Arts – B 1000 – Brussels – Belgium
Tel. +32 2 213 0832 or +33 609091060

PLEASE Complete these questions

COUNTRY	
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Please provide a short overview of the national transport policy especially the railway related issues
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Please provide a short overview of the Transport Research Policy and Research Initiatives

Please provide some information about National transport research funding sources

Please provide a short overview of the National rail research priorities

Please provide a short overview of the main rail research organisations and area of expertise

Please provide some information about the National research data base (if any)

Please provide a short overview of relevant National rail research projects

Please provide a short overview of participation in cross-border and EU funded rail research projects

2. Factsheets for the European Countries/ completed questionnaire

PLEASE Complete these questions	
COUNTRY	ALBANIA

Please provide a short overview of the national transport policy especially the railway related issues

The main specific objectives or goals of the Albanian National Transport Plan (ANTP) are to:

- Create a regulatory and legal system which promotes the optimal operation of the transport system;
- Support the development of the economy;
- Ensures equitable accessibility to transport throughout the country causing an improved balance in the country's regional development;
- Reduce traffic bottlenecks;
- Promote integration with the European Union and meet the transport demand of the Southern Balkan Region;
- Improve safety, quality and reliability of the transport system;
- Provide enhanced focus on passengers and freight shippers as customers and users;
- Create an environmentally sustainable transport system;

Priority projects in railway transport are:

- Restructure Albanian Railways to improve the management, marketing and financial situation of the company on the basis of the five-year Business Plan
- Approximate the legal framework with European legislation.
- Integrate into the regional railway network, notably through the construction of the rail connection to Macedonia.
- Modernise the railway infrastructure particularly along the core trunk network.
- Modernise the rolling stock with passenger trains as a priority.
- Modernization of the existing line of Corridor VIII, Durres – Vlore – Rrogozhinë - Pogradec cover all length of 230 km
- Construction of a new railway line between Lin – Struga to connect Macedonia with Durres Port. The feasibility study for this line has been completed.
- Modernization of existing line of Tirana - Bajze border with Montenegro, with a length of 140 km.

Please provide a short overview of the Transport Research Policy and Research Initiatives

Albania suffers a great deal from lack of infrastructure and resources (both material and human). R&D barely survives in the country, with very little or no mention of *transport* R&D.

But as the country emerges, new actors and new actions are brought into the picture, with the aim of setting things on the right path. With the founding of ARTI (Agency for Research, Technology and Innovation) in 2010, R&D funding will be provided through a single dedicated entity, hopefully increasing the number and efficiency of R&D activities in the future.

Please provide some information about National transport research funding sources

There is no special funding programme for transport research in Albania. Transport sector is

not prioritised in the national R&D programme and the share of transport in R&D activities is not stated in any of the research policy documents. The founding of ARTI (Agency for Research, Technology and Innovation) is expected to remedy this situation; however at this point there have been no studies or documents of the institute regarding transport research policies yet.

Please provide a short overview of the National rail research priorities

Although there is no formal strategy for transport research in Albania, some research priorities are defined in the context of European Projects. The background report of Transport Research for Albania which was prepared in frame of WBC-INCO.NET project highlights the following priorities:

- Priority 1: Traffic management System at the national road network and international transit transport in the axes of heavy traffic flows.
- Priority 2: The Researches on development of alternate public transport of low cost, travel time reduction, environmentally accepted and without noise.
- Priority 3: Management of virtual transport.
- Priority 4: Researches for Transport and Environment issues.
- Priority 5: Mobility for Urban Transport in the cities more than 150 thousands inhabitants.

Please provide a short overview of the main rail research organisations and area of expertise

Polytechnic University of Tirana(UPT)

UPT is the most active university in the field of transport research in Albania. The Faculties of Mechanical Engineering, Energy and Urban Architecture have a total of 51 academic staff. UPT is also a partner in FP7 Transport project TRANSBONUS.

The Institute of Transport (ITAL)

The Institute of Transport (IT), which was established as "The Institute of Transport Studies (ITS)" in 1985, is a "Service Unit" under the Ministry of Public Works, Transport and Telecommunications (MPWTT). The IT carries out mid and long term studies on transport sector issues, provides consultancy services and is an active partner in various regional projects.

Please provide some information about the National research data base (if any)

Please provide a short overview of relevant National rail research projects

Transport researchers in Albania focus mainly on infrastructure, assessment and policy making projects. There is no research project dedicated to railway. A few examples for transport researches are:

- Study on Planning of National Road Traffic,
- The Multimodal Transport between Albania and Kosovo,

- Study on the Privatization of the Urban Transport Sector,
- Study on Information Systems and Methods in Transport Statistics Database,
- Application of the advanced technology on goods processing in Ports, Airports and Railways,
- Feasibility Study of Saranda Airport.

Please provide a short overview of participation in cross-border and EU funded rail research projects

The only EU FP Transport project in which there is an Albanian partner is *TRANSBONUS*; which aims the assessment of the transport research potential in countries including Albania

COUNTRY	Austria
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Please provide a short overview of the national transport policy especially the railway related issues

Please find more information in the Austrian Transport Masterplan “Gesamtverkehrsplan für Österreich”:
http://www.bmvit.gv.at/bmvit/verkehr/gesamtverkehr/gvp/downloads/gvp_gesamt.pdf
 (Unfortunately there is only a German version available)

Railway related objectives are summarized here:

Ecologically Friendly Transport

Environment protection and resource efficiency are important for the Austrian transport policy:

- ⇒ Shifting transport from road to ecologically friendly rail
- ⇒ Intelligently connecting transport modes
- ⇒ Until 2025: increase capacity on the major rail axes (Objective: 40 per cent share of freight transport on rail)
- ⇒ Until 2025: Reduce greenhouse gas emissions in transport from 16 to 13 M t CO₂, NO_x emissionen up to 70 per cent and particulate matter up to 50 percent

Affordable and barrier-free mobility for all

- ⇒ 100 train stations will be modernized and 100 commuter trains will be

on rail within the next years

⇒ 140 train stations and stops will be made barrier-free.

Increase Efficiency in the Transport System

⇒ Reduce energy consumption by using new intelligent technologies and processes

⇒ Instead of 7.000 trains, the Austrian rail network will be able to handle 9.000 trains per day

⇒ At the moment the Austrian transport system consumes 240 Petajoule energy per year. This should be reduced to 210 Petajoule.

Please provide a short overview of the Transport Research Policy and Research Initiatives

There is a **Research Program called “Future Mobility”**

The Research Program Future Mobility focuses on the search for integrated solutions designed to help build the mobility system of the future, a system that must balance social, environmental and economic needs. This integrated approach helps create systems that contribute significantly to ensuring mobility while minimizing the negative impacts of transport. The complex interactions inherent in transport systems require interdisciplinary research approaches aimed at developing both technological and social-organizational innovations. Thus the program focuses on new markets, generating solutions that respond closely to the essential needs of society.

The Program Objectives and Thematic Fields are:

The mission-oriented program addresses strategic challenges in the areas of society, environment and economy by focusing on four themes.

The program supports system-oriented innovation in the fields of passenger and goods transport based on user needs. Complementing these user-oriented themes the program also supports technical innovation in the fields of transport infrastructure and vehicle technology. This combination encourages development of synergistic solutions designed to address today's mobility challenges and helps create a sustainable future-oriented framework for mobility research.

Program Details

•Duration: 2012-2020

•Annual Budget: 13 - 19 Million Euro

•Beneficiaries: Universities and non-university research groups, companies, NGOs, public agencies including transport providers.

•Coverage: Austria (primarily), international participation possible

•Measures: Biannual calls for proposals with thematic focus (competitive process), network building activities, dissemination and support for bringing products to market.

•Eligible Projects: Collaborative and strategic research with application-oriented focus.

Program Responsibility:

Austrian Federal Ministry for Transport, Innovation and Technology (bmvit)
Unit for Mobility and Transport Technologies
Renngasse 5, 1010 Vienna
email: i4@bmvit.gv.at

Program Management:

Austrian Research Promotion Agency (FFG)
Thematic Programmes
Sensengasse 1, 1090 Vienna
email: christian.pecharda@ffg.at

Please find more information on
http://www.bmvit.gv.at/en/innovation/mobility/future_mobility.html

Please provide some information about National transport research funding sources

It is also the **Research Program called “Future Mobility”**

Annual Budget: 13 - 19 Million Euro

Program Responsibility: Austrian Federal Ministry for Transport, Innovation and Technology (bmvit) - Unit for Mobility and Transport Technologies

Program Management: Austrian Research Promotion Agency (FFG) - Thematic Programmes

Please provide a short overview of the National rail research priorities

We don't have a transport mode approach in our research program “Future Mobility”, but a systemic one. Rail research could fit in following research priority areas:

Mobility of Goods:

- Sustainable Transport Chains
- Sustainable Mobility of Goods in Cities
- Sustainable Last Mile and First Mile Solutions
- Intermodal transport hubs
- Innovative means of transport

Personal Mobility

- Accessibility for all
- Information, navigation and way finding
- Innovative means of transport
- Tools for demand survey and transportation planning
- Awareness building and shaping behavior

Transport Infrastructure

- effective asset management
- Energy Efficiency
- innovative road way and track systems
- ITS for transport infrastructure
- safety in transport infrastructure
- design and management
- construction methods for transport infrastructure

Vehicle Technologies

- Electric propulsion systems
- Lightweight vehicles

Please provide a short overview of the main rail research organisations and area of expertise

Wiener Linien GmbH & Co KG (Vienna's Urban Public Transport Operator)

Area of expertise in rail research: Urban Rail Operations; Track Measurement; Infrastructure renewal during line service; Real Time Passenger Information; barrier free station building (for PRM); Energy efficiency of tram/light rail vehicles,

Areas of research priorities: Line Disruption management; Track Measurement; Lifecycle costing; Infrastructure renewal during line service; Real Time Passenger Information and Routing; barrier free station building (for PRM); Energy efficiency of tram/light rail vehicles; Energy Efficiency of power grid; improvement of ride quality

**VIRTUAL VEHICLE - Kompetenzzentrum - Das virtuelle Fahrzeug
Forschungsgesellschaft mbH**

Inffeldgasse 21/A, 8010 Graz, Austria

Area of expertise in rail research:

Railway Vehicles and Infrastructure

Areas of research priorities:

- Vehicle System Dynamics
- Vehicle-Track Interaction
- Track Dynamics
- Fatigue and Deterioration of Vehicle and Track Components
- Acoustics
- HVAC
- Embedded Systems
- Wireless Communication
- TCMS - Train Control and Monitoring Systems
- Diagnosis and Monitoring
- Maintenance of Vehicles and Track

Carl Ritter von Ghega Institute for Integrated Mobility Research (<http://mobility.fhstp.ac.at>)

2.) Area of expertise in rail research: Railway infrastructure technology, railway operation, public transport, intelligent transportation systems, information systems, sustainable mobility, multi-modal lifestyles

Boku - University of Natural Resources and Life Sciences Department of Economics and Social Sciences Institute of Production Economics and Logistics

Guttenberghaus, Feistmantelstr. 4

1180 Vienna

fon: ++43 1 47654 4411

email: manfred.gronalt@boku.ac.at

www.wiso.boku.ac.at/pwl.html

Area of expertise in rail research:

Intermodal transport and Traffic systems shunting yards analysis

Areas of research priorities:

Intermodal (train)network design

Agent based simulation of intermodal terminal networks Key performance indicators for Intermodal Transportation

Rail road terminal configuration

Industry driven rail road terminal and industrial sidings

broad gauge - normal gauge terminal design and structure shunting yard operations modelling and synchronous shunting simulation

Members of the Austrian Rail Technology Cluster: <http://www.rtca.at/en/home.html>



[ABC Consulting](#)



[Alpine Bau GmbH.](#)



[Alstom Austria GmbH](#)



[BAMM - Dr. Mittermayr Scientific Consulting GmbH.](#)



[Berner & Mattner Systemtechnik GesmbH](#)



[BBR Verkehrstechnik GmbH.](#)



[Combinet](#)



[EBE Solutions GmbH](#)



[Fachhochschule St. Pölten](#)



[FCP Fritsch, Chiari & Partner ZT GmbH](#)



[Getzner Werkstoffe GmbH](#)



[Hottinger Baldwin Meßtechnik GmbH](#)



[HY-POWER Produktions und Handels GmbH](#)



KAIL Consulting



[Linsinger Maschinenbau GmbH](#)



[LOGSQL e.U.](#)



[MABA Track Solutions GmbH](#)



[Metall- und Kunststoffwaren Erzeugungsgesellschaft m.b.H.](#)



[MEV Austria Independent Railway Services GmbH](#)



[Mobility Consultants GmbH. \(MC\)](#)



[Montan Speditions GmbH.](#)



[OpenTrack Railway Technology GmbH.](#)



[Österreichisches Forschungs- und Prüfzentrum Arsenal Ges.mbH](#)



[Pilz GmbH.](#)



[Prosoft Süd Consulting GmbH](#)



[qinematiq e.U.](#)



[RDSA Rail Data Services Austria GmbH&Co KG](#)



[Research & Data Competence OG](#)



[Rhombert Rail](#)



[Schieneninfrastruktur Dienstleistungsgesellschaft mbH](#)



[Schwechater Kabelwerke GmbH](#)



[Schweißtechnische Zentralanstalt](#)



[SNIZEK + PARTNER Verkehrsplanungs GmbH](#)



[Steinhauser Consulting Engineers ZT-GmbH.](#)



[Technische Universität Wien, Institut für Verkehrswissenschaften](#)



[Technoma Technology Consulting & Marketing GmbH](#)

The logo for Thales, featuring the word "THALES" in a bold, blue, sans-serif font. A small blue dot is positioned above the letter 'A'.

[Thales Austria GmbH](#)

The logo for TransSystems, featuring a stylized blue 'T' icon followed by the text "TransSystems" in a bold, black, sans-serif font. Below it, in a smaller font, is "Development & Research GmbH".

[TransSystems Development & Research GmbH](#)

The logo for voestalpine, featuring the word "voestalpine" in a bold, black, sans-serif font. Below it, in a smaller font, is "EINEN SCHRITT VORAUS.".

[voestalpine - Division Bahnsysteme](#)

The logo for Voith, featuring the word "VOITH" in a bold, blue, sans-serif font. Below it, in a smaller font, is "Engineered reliability.".

[Voith Turbo GmbH](#)

The logo for VRVis, featuring the text "vrvis" in a bold, black, sans-serif font. To the right of the text is a yellow square containing the letters "vrvis" in a smaller, black, sans-serif font. Below the text is "zentrum für virtual reality und visualisierung forschungs-gmbh".

[VRVis Zentrum für Virtual Reality und Visualisierung Forschung GmbH](#)

The logo for Wiener Linien, featuring a red square with a white stylized 'W' and 'L' inside. To the right of the square is the text "WIENER LINIEN" in a bold, black, sans-serif font.

[WIENER LINIEN GmbH & Co KG](#)



[Wiener Lokalbahnen AG.](#)



[Zierl Consult ZT GmbH](#)



Einzelmitglied
des RTCA

DI Peter Knezu

Further members of the Austrian Railway Industry Association:

ALPINE-ENERGIE Österreich GmbH

www.alpine-energie.com

Alstom Austria GmbH

<http://alstom.echonet.at/home/home>

Balfour Beatty GmbH

www.bbrail.at

BATEGU Gummitechnologie GmbH & Co KG

www.bategu.at

Bombardier Transportation Austria GmbH

www.bombardier.com

Video: www.bahnorama.com/ondemand/play.php/vid,1162,Bombardier_Austria

European Trans Energy GmbH (EUROPTEN), vormalig VA TECH T&D GmbH

www.europten.com

Frauscher Sensortechnik GmbH

www.frauscher.com

FREQUENTIS AG

www.frequentis.com

GIFAS-Electric GmbH

www.gifas.at

Harting Ges.m.b.H.

www.harting.com

Kapsch CarrierCom AG

www.kapsch.net

Knorr-Bremse GmbH

www.knorr-bremse.at

Liebherr Transportation Systems GmbH & Co KG

www.liebherr.com/ts

Plasser & Theurer Export von Bahnbaumaschinen Ges.m.b.H.

www.plassertheurer.com

Scheidt & Bachmann Österreich GmbH

www.scheidt-bachmann.at

Siemens AG Österreich, Infrastructure & Cities CEE

www.siemens.com/mobility

SPL Powerlines Austria GmbH & Co KG

www.powerlines-group.com

Thales Austria GmbH

www.thalesgroup.com

Traktionssysteme Austria GmbH

www.traktionssysteme.at

Voith Turbo GmbH

www.voithturbo.com

Vossloh Kiepe Ges.m.b.H.

www.vossloh-kiepe.at

Zelisko GmbH

www.zelisko.at

Please provide some information about the National research data base (if any)

www.ffg.at/verkehr (When you click on a project, you will be able to switch to the English version)

Please provide a short overview of relevant National rail research projects

CILIA - Comprehensive Infrastructure Life-Cycle Assessment

<https://www2.ffg.at/verkehr/projektpdf.php?id=812&lang=en>

ECO - ECO - Efficient assessment of conformity in railway traffic

<https://www2.ffg.at/verkehr/projektpdf.php?id=818&lang=en>

fractINSPECT - <https://www2.ffg.at/verkehr/projektpdf.php?id=654&lang=en>

IONICRAIL - <https://www2.ffg.at/verkehr/projektpdf.php?id=652&lang=en>

ISIS 4 SIX - <https://www2.ffg.at/verkehr/projektpdf.php?id=804&lang=en>

Opti LSW - Noise barriers - <https://www2.ffg.at/verkehr/projektpdf.php?id=807&lang=en>

PlasmaTram - Profile Laseracquisition System meets Austrian Tramways - <https://www2.ffg.at/verkehr/projektpdf.php?id=814&lang=en>

RMSL compact - Railway Management System for Secondary Lines

<https://www2.ffg.at/verkehr/projektpdf.php?id=799&lang=en>

LeWaDis

<https://www2.ffg.at/verkehr/projekte.php?id=699&lang=de&browse=programm>

SWABPort

<https://www2.ffg.at/verkehr/projektpdf.php?id=817&lang=en>

TRIUMPH

<https://www2.ffg.at/verkehr/projektpdf.php?id=809&lang=en>

<https://www2.ffg.at/verkehr/projekte.php?id=1120&lang=de&browse=programm>

InnoSteel

<https://www2.ffg.at/verkehr/projektpdf.php?id=1142&lang=en>

ASB-CombiHub

<https://www2.ffg.at/verkehr/projektpdf.php?id=1140&lang=en>

KANBAHN

<https://www2.ffg.at/verkehr/projektpdf.php?id=1147&lang=en>

TeTraNet

<https://www2.ffg.at/verkehr/projektpdf.php?id=1138&lang=en>

exSentric - Extending Sensor Technology for Rails in the City

<https://www2.ffg.at/verkehr/projekte.php?id=1132&lang=de&browse=programm>

IBIS

<https://www2.ffg.at/verkehr/projekte.php?id=1130&lang=de&browse=programm>

INTENSE

<https://www2.ffg.at/verkehr/projekte.php?id=1143&lang=de&browse=programm>

RA²MSES - Rail Acousic Annoyance Monitoring SEnsor System

<https://www2.ffg.at/verkehr/projekte.php?id=1116&lang=de&browse=programm>

Sensorsystem Bahn

<https://www2.ffg.at/verkehr/projekte.php?id=1122&lang=de&browse=programm>

SYS_RSD

<https://www2.ffg.at/verkehr/projekte.php?id=1144&lang=de&browse=programm>

Please provide a short overview of participation in cross-border and EU funded rail research projects

13 Austrian organisations participate in 11 FP7 projects. That means, 17% of all Austrian participations take place in the rail sector.
Main areas of these projects are maintenance, safety, systems and also the use of GALILEO applications for railway-operators.
There is also a lot of expertise in the field of accessibility of disabled people to railways.

COUNTRY	Bosnia-Herzegovina
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Please provide a short overview of the national transport policy especially the railway related issues

The strategy Transport Sector Policy and Strategy for Bosnia and Herzegovina from 2007 to

2020 defines priorities in the transport sector but for now it is in the adjustment phase and still pending.

Beside the National strategy, the Entities' Governments have been developing infrastructure strategies and also at the cantonal level authorities are setting up priorities and strategies for spatial planning and infrastructure development of the cantons.

In Bosnia and Herzegovina, the Corridor Vc highway is one of the most significant projects, providing rational connecting to neighbouring countries and regions and for encouraging development of the whole economy. Rehabilitation of the main and regional roads in both entities and the Brčko District is also an important road development priority. Projects in railway infrastructure reconstruction along with structural changes and separation between infrastructure and operations will provide an increase in the transport of goods.

Please provide a short overview of the Transport Research Policy and Research Initiatives

The Framework Law on scientific and research activities was adopted, improving coordination of Entity-level research actions with the State-level research strategy. A science and development strategy for 2010-2015 and an action plan were adopted. The Science Council was appointed to assist the Ministry for Civil Affairs in the strategic development of science, research and innovation policy.

At the State level, the Ministry of Civil Affairs of BiH (MoCA) through its Department for Science and Culture mainly coordinates science policy, promoting international scientific cooperation and participation into the FP7, COST and EUREKA programmes. The Ministry of Civil Affairs (MoCA) of BiH supported budget to create a foundation for the integration of BiH in ERA. The BiH Ministry of Civil Affairs in accordance to the Framework Law on Science foresees the funding of BiH participants in these programmes and other international scientific projects.

Please provide some information about National transport research funding sources

In BiH, all state entities independently determine their R&D spending and thus, the State, Republic of Srpska, Federation of BiH and its Canton governments all define their own funding system according to their needs and criteria.

Please provide a short overview of the National rail research priorities

Transport Research priorities in accordance with general transport needs identified in "National Background Report on Transport for BiH" are as follows:

- Road Traffic Safety Improvement,
- Mitigation of Transport Related Environmental Impacts,
- Improvement of Urban mobility for Sarajevo and Banja Luka,
- Intermodal Transport Development,
- Transport Infrastructure Management,
- Traffic Management.

Please provide a short overview of the main rail research organisations and area of expertise

The research in BiH is mainly conducted by the public universities and a few other public

research organisations. The main institutions with a significant number of researchers performing transport oriented projects and research are: Faculty of Mechanical Engineering – University of Sarajevo, Faculty of Mechanical Engineering – University of Banja Luka and Faculty of Transport and Communication – University of Sarajevo.

Please provide some information about the National research data base (if any)

Please provide a short overview of relevant National rail research projects

Please provide a short overview of participation in cross-border and EU funded rail research projects

In Fifth and Sixth Framework Programmes none of the projects were dealing with transport research. Present involvement in Seventh Framework has improved, one project with the acronym TransBonus aims to improve and promote closer Scientific and Technological (S&T) cooperation opportunities between Europe and the Western Balkan Countries (WBCs) in the area of Surface Transport.

COUNTRY

CROATIA

Please provide a short overview of the national transport policy especially the railway related issues

The fundamental document for transport development in Croatia is the Transport development strategy of the Republic of Croatia (dated in 1999), although the recent documents such as the National strategy for ISPA Programme (Transport sector – 2004), Strategic development framework 2006-2013 and Transport Operational Program (TOP) 2012-2013 are defining the main priorities for transport development and present the main directions for further development in areas of the transport system and transport research.

In rail transport area the Railway Act (Official Gazette No. 123/03, 194/03, 3 0/04) which was implemented in 2006, represents the basic national regulations for the area of railway transport, which determines the state ownership over the railway infrastructure (status of public assets in general use) as stated in Božičević, Steiner and Smrečki, 2008.

The most important document in the area of railway transport is National Railway infrastructure Program 2008-2012, as the first national program for long-term development plan of railway infrastructure in Croatia

Please provide a short overview of the Transport Research Policy and Research Initiatives

Research projects have an important role in the transport development in Croatia as part of the program of permanent research activities at the Ministry of Science and Technology.

The Government will remain a key investor in the science infrastructure, fundamental research, and education, which influences the strength of the innovation system, but will also create conditions for collaboration between academia and business, facilitate exploitation of research by other sectors such as transport, energy and health care, and encourage the adoption of technology to improve industries. The Government will actively encourage private sector investment into R&D by offering matching grant schemes. The Government will work on creating a favourable climate for private sector investment into R&D by proposing favourable tax legislation to the Parliament, and will also work to simplify the administrative procedures and remove bureaucratic barriers which prevent rapid development of enterprises.

In the process of transformation of the higher education system at the European level with the tendency of harmonising the institutional and organisational frames of the universities' work and academic activities, and stimulating knowledge transfer, transport sciences will also have adequate status in the scientific classification and a thematically and methodologically recognisable dimension of academic activities.

Please provide some information about National transport research funding sources

Due to the absence of transport funding research structure of Croatia, the structure of general researcher funding is explained.

The most important funding source for domestic R&D is the government sector which provides about 50% of GERD (Gross Domestic Expenditures on Research and Development) while the business enterprise sector contributes with a modest 35%. The Government sector not only plays a major role in financing R&D, it also performs most R&D. In 2007, the government sector (public institutes and universities) performed 59% of GERD while the business sector performs 41% of GERD. The ratio of private and public expenditures of 40:60 is almost constant since 2000. However, the share of business sector expenditures in GDP is decreasing since 2000, from 0.56% of GDP to 0.38% of GDP in 2007.

In the area of research and technological projects financing four main institutions should be mentioned:

- **Ministry of Science, Education and Sports (MSES):** provides "institutional funding" and funds for research activities through the competitive-based projects aimed at all scientific fields;
- **National Science Foundation (NZZ):** the first independent foundation for research activities, in addition to the MSES which used to be the only financier of R&D in Croatia;
- **Business Innovation Centre of Croatia (BICRO)** with the task to create, implement and finance innovation policy programmes for the commercial application of science and to foster closer science-industry cooperation between science and industry;
- **Croatian Institute for Technology (CIT)** with the task to finance research technological research projects and to develop the national innovation system.

Please provide a short overview of the National rail research priorities

Research projects play an important role in transport development in Croatia as part of the program of permanent research activities at the Ministry of Science and Technology. Transport research projects are addressing different topics showing the main trends in the field of transport research:

- intermodal transport
- intelligent transport systems development,
- sustainable development of urban transport
- environmental aspects of transport development
- logistic modelling

- transport safety
- development of transport network

Please provide a short overview of the main rail research organisations and area of expertise

There are two scientific and research institutions in the transport sector of Croatia – the Institute of Transportation and Communications and the Scientific Council for Traffic of the Croatian Academy of Sciences and Arts. An extremely dynamic development these three institutions, through joint co-operation, have insured consistent scientific engagement of all its employees in all aspects of national transport development.

Institute of Transportation and Communications

The Institute of Transportation and Communications cover targeted topics related to the solving of specific problems of national transport sector:

- reconstruction of the dangerous spots on the roads,
- optimisation of public transport,
- phased approach to the development of road network,
- development of non-conventional aviation for the Adriatic coast, etc.

Scientific Council for Traffic (Croatian Academy of Science and Art)

The Scientific Council for Traffic covers the areas of road, railway, water, air and postal traffic. The council includes several sections: International Co-operation Section, Section for Regional and Zoning Traffic Planning, Traffic Medicine Section Road Traffic Section, Railway Traffic Section, Postal Traffic Section, Air Traffic Section, Traffic Ecology Section, Section for Traffic in Internal Waterways and Section for Smart Transport Systems and Logistics.

There are also some academic institutions in the field of transport research such as University of Zagreb, University of Rijeka, Brodarskai Institute, etc., however, their participation in railway research is limited.

Please provide some information about the National research data base (if any)

National databases of scientific projects in Croatia are:

- **Svibor:** the first public national R&D database includes project data for the period 1990-1995. (<http://www.mzos.hr/svibor/svibor.htm>)
- **zProjekt archives:** includes project for the period 1996 until June 2002. (<http://zprojekti.mzos.hr/page.aspx?pid=6&lid=2>)
- **zProjekt of active projects:** research papers from 1996 until the present, and they are currently entering additional data on bibliography for the papers published in the period 1991 – 1995. (<http://zprojekti.mzos.hr/page.aspx?pid=97&lid=2>)

The national database on research projects is developed and maintained by the Ministry of Science, Education and Sport. The database includes information on: name of the project, senior researcher, institution, scientific area with specific information about project with contact information. Transport research projects can be found under the chapter of technical science, under review group: mechanical Engineering, Shipbuilding, Traffic, and Technology.

Please provide a short overview of relevant National rail research projects

The Institute of Transportation and Communication is the leading scientific, research and professional organisation in Croatia and is active in scientific and research work, professional, i.e. forecasting, planning and consulting services regarding transportation including railway, road, maritime, river, air and combined transport. Since having been founded in the current form, the Institute has realised more than 80 projects, among which rail related research projects are:

- Process modelling and railway development Optimisation (2002)
- High-speed railways (2002)

Please provide a short overview of participation in cross-border and EU funded rail research projects

Croatia has been fully associated with the EC Framework Programme since 1st of January 2006. Prior to that, Croatia participated in FP5 and FP6 as a third country which allowed Croatian partners to participate in the projects as extra members but not as members of the consortium. Presently Croatia coordinates several FP projects in different scientific fields (bio-medicine, nuclear physics, textile industry, solar energy, underwater robotics, etc.). Transport research related projects are as follows:

- Project Supporting research on climate-friendly transport (REACT)
- Project Baltic-to-Balkan network for logistics competence (B2B LOCO)
- Tools for Ultra Large Container Ships (TULCS)
- RIS services for improving the integration of inland waterway transports into intermodal chains (RISING)
- Navigation and Inland Waterway Action and Development in Europe - NAIADES (PLATINA)

Country - Czech Republic

Fact sheet reflecting the situation of the organization of railway research at national level

The purpose of this FOSTERRAIL Factsheet is to provide:

- Description of the organisation of the railway research at a national level
 - from the governmental point of view for setting the political priorities and research strategies
 - from the stakeholder's point of view for performing the research
- Identification of strategic national railway research objectives and priorities, making available information on their developments and results. When available, information on multi-modal issues might be included

1	Table of contents
2	Executive Summary <p>The “National Policy of Research, Development and Innovations” is a principal strategic document for research, prepared with a prospect until the year 2020. This document was approved by the government in 2009 and replaced the previous one, adopted for years 2004 – 2008.</p> <p>The Czech Republic National Policy of R&D is one of basic instruments to implement the reform of R&D and system. This document was prepared in accordance with binding and recommending documents of the Europeans Union’s bodies in particular: Strategy Europe 2020 and the Union of Innovations.</p>
3	Transport Research Policy and Research Initiatives
3a	Overview of the National transport policy with a focus on rail <p>Entities Supporting Science and Research:</p> <ul style="list-style-type: none"> - Governmental Institutions (ministries of the Czech Republic) - Agencies which coordinate Research and Innovations Activities (being often state institutions) - Institution which prepare conditions for application of research and development results in practice, such as different scientific and technical parks, business incubators or technology transfer centers – emerging mostly at universities.
3b	Current state-of-the-Art in rail transport research <p>Railway transport is the backbone of the transport system in the Czech Republic. This corresponds to the position of railway research. Research and development fields is in competence of Ministry of Education, Youth and Physical Education, ministry of Industry and trade and agencies established by it, railway research is supported also by Ministry of Transport. Railway research is carried out by selected technical university, research and design institutions and companies of the railway industry.</p> <p><u>Basic Research and Development Regulations of the Czech Republic:</u></p> <ul style="list-style-type: none"> - Act No. 341/2005 Coll., on Public Research institutions, as amended - Act No. 130/2002 Coll., on Research, Experimental Development and Innovations Financed by Public Means - Act No. 283/1992 Coll., on the Academy of Sciences of Czech Republic, as amended - Government’s Decree No. 397/2009 Coll., on Research, Experimental Development and Innovations Information System (valid as of 1. January 2010) - Council for Research, Developments and Innovations Statute (2009)

	<ul style="list-style-type: none"> - Grant Agency of the Czech Republic Statute (2002,2009) - Technological Agency of the Czech Republic Statute (2009)
3c	<p>National transport research funding sources</p> <p>The Ministry of Industry and Trade Research and Development Programmes</p> <p>in recent years:</p> <ul style="list-style-type: none"> - The Institutional Support to a Long-lasting Conceptual Development of Research Organisation (financed by means of Czech Republic's state budget) - The TIP Programme, supporting research and development projects, perform before their launching in market (financed by means of Czech Republic state budget) <p>now:</p> <ul style="list-style-type: none"> - The Ministry implements through its agency Czech Invest – contribution-based organisation Operational Programme - Business and Innovations, financed by the European Union's Structural Funds - The Ministry of Transport - "Operational Programme Transport: <ul style="list-style-type: none"> - Construction and modernisation of TET-T network and follow-up networks - Construction and modernisation of rail transport regional networks - Construction and development of motorway network and 1st class road network out of TET-T - Improvement of transport quality and environment protection from transport point of view - Construction and modernisation of important transport links in Prague-capital area - Grant Agency of the Czech Republic – railway research projects financed by EU funds and national resources - Technological Agency of the Republic - railway research projects financed by EU funds and national resources
4	<p>National rail research priorities</p> <ul style="list-style-type: none"> - Energy and Environment-Friendly Transport (as alternative motor units in public transport, new and hybrid propulsions, monitoring methods and evaluation of environmental pollution by transport etc.) - Safe and Resistant Transport to Dangerous Effects (as safety standards at transport routes and means, safety standards in in ITS safety, safety technologies to increase transport infrastructure safety)

	<ul style="list-style-type: none"> - Economic Transport (new approaches and standards in transport infrastructure funding, check and supervisions principles used in public transport, quantifikation of external costs values etc.) - Information Systems and Telematics in favour of Interoperable Transport (as transport telematics and new systems used in transport management, transport telematics in relation to citizens with reduced ability of move and orientation, telematics information systems in logistics and transport of hazardous goods etc.)
5	<p>Overview of the rail research organisations and area of expertise</p> <p>The main universities:</p> <ul style="list-style-type: none"> - The Czech Technical University in Prague – Transport Faculty (transport and telecommunications) - The University Pardubice – Jan Perner’s Transport Faculty (UPA) (technological processes in transport and postal systems, logistics and securing traffics, maintenance and renewal of transport means and infrastructure, research of running properties of railway vehicles) <p>The other universities with partially rail research activities:</p> <ul style="list-style-type: none"> - Mechanical Engineering Faculty at the Czech Technical University (ČVUT) Prague - Civil Engineering Faculty at the Czech Technical University (ČVUT) Prague - Civil Engineering Faculty at the Technical University (VUT) Brno - Electrotechnical Faculty at the Westbohemian University, Plzeň - Mechanical Engineering Faculty at the Westbohemian University, Plzeň - Metallurgy and Material Faculty at Mining College – the Technical University , Ostrava <p>The CR Academy of Sciences and its Research Departments</p> <p>The Transport Research Center, Science and Research Institute (CDV) - (public research institution and the unique transport scientific and research organisation in competence of the Ministry of Transport. Research, development and expert activities for all modes of transport, public and commercial sector</p> <p>The Railway Research Institute (VUZ) - (private company, professional services and complex solutions in the field of assessment, testing and consulting for railway systems and rail transport. The institute owns the test and new training center. The Test Center at Velim is a testing and technological background for practical verification of railway vehicles’ technical parameters and running parameters directly on line).</p> <p>The VUKV Inc., former the Research Institute of Railway Vehicles (private company, development and testing of rail vehicles, their parts and other components, consulting services, complete solutions of development projects, introductory study, project itself, construction and preparation of a design documentation, assistance by manufacturing a prototype)</p> <p>Other Entities Performing Research and Development for Railway - (entities delivering their products to railway sector, applied research, development and innovation. They often join their forces at working groups together with the above- mentioned entities and universities.</p>

6	<p>National research data base (if any)</p> <p>The national research data base till now not yet exist. It is planned.</p>
7	<p>Overview of relevant national rail research projects</p> <p><u>Projects financed by the CR Grant Agency (now realised):</u></p> <ul style="list-style-type: none"> - Model Uncertainties of Ferroconcrete Constructions Resistance <p><u>Projects financed by the CR Technological Agency (now realised):</u></p> <ul style="list-style-type: none"> - Research of Running Qualities and Driving Gears Control of Traction Vehicles - Increase of Running Track's Quality in Turnouts by help of Flexible Pads - Usability and Efficiency Research of so-collect Light Barrier on the CR Railway Crossing - Intelligent Industrial Systems for Railway Wheels' Automatic Testing - Research of Needed Operational Parameters of Perspective Provisional Bridges, Destined to Railway Transport - Technics Measuring Power Effects in Wheel-Rail Contact - Research and Development of Progressive Vehicles' Sand System - Development of a Wireless Detector for a Safe Transfer of a Crossing's Conditions to Rail vehicles - Universal Intelligent Steering Unit - AdapTrain – Distributed Adaptive Train Runs' Optimizer - Locomotive Aggregates - Tunnels Remediation – Technology, Materials and Methodical Steps - Optimization of Transport Infrastructure Construction Design in order to Increase their Durability and Traffic Safety - Active Safety System Enabling a Space Localization of Objects among Rail Vehicles and before their front Ends - Rail Vehicle Competence center - Center for Effective and Sustainable Transport Infrastructure
8	<p>Participation in cross-border and EU funded rail research projects</p> <p>No information.</p>

Country - Estonia

Fact sheet reflecting the situation of the organisation of railway research at national level

The purpose of this FOSTERRAIL Factsheet is to provide:

- Description of the organization of the railway research at a national level
 - from the governmental point of view for setting the political priorities and research strategies
 - from the stakeholder's point of view for performing the research
- Identification of strategic national railway research objectives and priorities, making available information on their developments and results. When available, information on multi-modal issues might be included

1	Table of contents
2	Executive Summary The railway network is under a stage of development and the rail gauge is Russian standard. In the past few years Estonia authorities have been working towards creating connections to the European rail network. Estonia is involved in project 'Rail Baltica' this rail will be connect Warsaw-Kaunas-Riga-Tallinn- Helsinki.
3	Transport Research Policy and Research Initiatives
3a	Overview of the National transport policy with a focus on rail The key document setting out the research strategy in Estonia is the new Estonian Research, Development and Innovation Strategy (RDI) <i>Knowledge-based Estonia</i> . This document states the research policy objective to be 'updating the pool of knowledge', while the objective for innovation policy is to 'increase the competitiveness of enterprises'. The RDI Strategy is supplemented by an implementation plan for 2010–2013 that provides a policy framework for short- and medium-term planning. In 2010, Estonian Research Infrastructure Roadmap approved by Government was published. This strategy document deals with investments of national importance over the next 10 to 20 years.
3b	Current state-of-the-Art in rail transport research The two central organisations responsible for R&D policy are the Ministry of Economic Affairs and Communications, and the Ministry of Education and Research. The majority of transport research in Estonia is carried out within university (Tallinn University of Technology).

3c	<p>National transport research funding sources</p> <p>Transport research can be funded in several ways in Estonia. Transport research is mainly financed by the Ministry of Economic Affairs and Communications and the administrations under its control. The Ministry of Environment and the Ministry of Education and Research also provide funding for transport related programmes but on a smaller scale. International funding is provided by the European Union. Public funding is available for both priority research topics for businesses (through the Competence Centres Programme) and for applied research, not differentiating or prioritising specific areas of research. Also, individual research grants are financed by the Estonian Science Foundation in order to support high-level initiative research, new ideas and studies.</p>
4	<p>National rail research priorities</p> <p>The long term objective of transport policy is to ensure the systematic maintenance and development of an effective, sustainable, integrated, environmentally friendly, balanced and multimodal transport system that will meet the increasing demands of the national economy, international trade and of the population for a qualitative and quantitative transport service ensuring safety, reliability and reasonable prices.</p> <p>The main problems to be solved in the railway sector are refurbishment and modernisation of infrastructure, increase of safety levels and increase of throughput capacity. In public transport, especially in the railway sector, it is necessary to resolve issues concerning modernisation of rolling stock and establishment of an appropriate infrastructure. Research in the sector is driven by these problems and oriented to find necessary solutions.</p> <p>Railway transport is in the stage of development. TEN-T project with high priority, the construction of Rail Baltica railway line is being implemented. The new rail is planned to have the 1435 mm EU standard gauge different from default Russian gauge. The construction is not to be complete in this decade. Rail Baltica is the most ambitious development planned; other projects only have importance in local level.</p>
5	<p>Overview of the rail research organisations and area of expertise</p> <p>Tallinn University of Technology - Tallinn University of Technology (TUT), the only technological university in Estonia, is the flagship of Estonian engineering and technology education. Here the synergy between different fields (technological, natural, exact, social and health sciences) is created and new ideas are born.</p> <p>Estonian Science Foundation - The Estonian Science Foundation (ETF) is an expert research-funding organisation. Its main goal is to support the most promising research initiatives in all fields of basic and applied research.</p>
6	<p>National research data base (if any)</p> <p>Estonian Research Portal - Estonian Research Portal is the public section of the Estonian Research Information System. Estonian Research Portal concentrates information on Estonian R&D and offers an environment for operative information exchange.</p>
7	<p>Overview of relevant national rail research projects</p> <p>Dc Voltage Converter for Renewable Energy Applications- Tallinn University Faculty of Power Engineering- project contains the development and improvement of a DC voltage converter used in power-operated railway vehicles. The objective of this project is to increase the converter's efficiency and power density and reduce the converter's mass.</p>

8	<p>Participation in cross-border and EU funded rail research projects</p> <p>B2B LOCO Project B2B LOCO (BALTIC - TO - BALKAN NETWORK FOR LOGISTICS COMPETENCE) is a 7th Framework Programme project, co-ordinated by the Institute of Logistics and Warehousing from Poznan, Poland.</p> <p>Rail Baltica Growth Corridor. BSR INTERREG IV B programme. (2011-2013) Rail Baltica Growth Corridor aims to improve the competitiveness and accessibility of Baltic cities and regions by increasing their interaction and collaboration. RBGC creates a cooperation platform that observes the needs of transport sector and its customers in line with green growth corridor principles.</p>

COUNTRY	FRANCE
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Please provide a short overview of the national transport policy especially the railway related issues

Please provide a short overview of the Transport Research Policy and Research Initiatives

At the administration level, the Ministry of Higher Education and Research designs and coordinates research policy. The Ministry is assisted by various consultative bodies. For instance, the High Council for Science and Technology advises the Prime Minister and makes recommendations on national research and innovation strategies. In addition, the Ministry for Economy, Finance and Industry is responsible for industrial research and energy research and plays a specific role in research carried out by the private sector.

At the operational level, the research system comprises the following agencies for implementing R&D and innovation policies:

- OSEO innovation, which supports businesses, particularly SMEs, with R&D and innovation projects;
- National Agency for Research, which funds fundamental research projects on a competitive basis;
- Agency for Environment and Energy Management, which was created to support and fund research on the environment and energy on a partnership basis.

Please provide some information about National transport research funding sources

Transport research can be funded through the general research framework and through programmes dedicated to transport. It can also benefit from the funds allocated to the research programmes in related areas, for instance, energy and environment.

The public funding for research is made available through the National Agency for Research. Priority

research topics are financed, which are determined in the National Strategy for Research and Innovation. OSEO Innovation is the main source for funding research for the private sector. The major source for funding transport research is the PREDIT programme: Programme for Research and Innovation of Land Transport. The French Environment and Energy Management Agency sometimes launches calls relevant to transport.

Please provide a short overview of the National rail research priorities

Please provide a short overview of the main rail research organisations and area of expertise

Please provide some information about the National research data base (if any)

Please provide a short overview of relevant National rail research projects

Please provide a short overview of participation in cross-border and EU funded rail research projects

COUNTRY

GERMANY

Please provide a short overview of the national transport policy especially the railway related issues

Please provide a short overview of the Transport Research Policy and Research Initiatives

Transport research is high on the Government Agenda. The objectives of research policy are defined in the federal High-Tech Strategy 2020, which outlines national research and innovation policy. Transport research receives special support from the Federal Ministry of Transport, Building and Urban Development, which conducts departmental research dedicated to transport and mobility. The Ministry's research programme comprises 14 individual programmes and seven larger innovative projects.

Transport research is guided by the national transport policy outline, which is set out in the following

documents:

- Framework Investment Plan for the Federal Transport Infrastructure for 2011–2015
- Freight Transport and Logistics Action Plan
- Road Safety Programme 2011.

In addition, Energy and Climate Change Policy is an integral part of Federal Government policy. This policy is used and evaluated by the Federal Ministry of Transport, Building and Urban Development to derive its own strategies.

Please provide some information about National transport research funding sources

Transport research is funded through dedicated programmes and through the general scheme for research funding.

The German Research Foundation plays a central role in the fundamental research in Germany. At federal level, research is mainly funded by the Federal Ministry of Education and Research, which finances large research organisations jointly with the Länder governments.

Organisations responsible for institutional framework and funding are:

Applied Research Network Transport Systems Engineering Berlin

German Research Community

The Federal Ministry of Education and Research

The Federal Ministry of Economics and Technology

The German Council of Science and Humanities

The German Research Foundation

The Joint Science Conference

The Federal Ministry of Transport. Building and Urban Development

Federal Motor Transport Authority

Federal Office for Goods Transport

Federal Railway Property Agency

Federal Bureau of Aircraft Accidents Investigation

Federal Maritime and Hydrographic Agency

Federal Railway Office

Federal Aviation Office

Federal Bureau of Maritime Casualty Investigation

Federal Waterways and Shipping Administration

Please provide a short overview of the National rail research priorities

Please provide a short overview of the main rail research organisations and area of expertise

Please provide some information about the National research data base (if any)

Please provide a short overview of relevant National rail research projects

Please provide a short overview of participation in cross-border and EU funded rail research projects

Country - Greece

Fact sheet reflecting the situation of the organisation of railway research at national level

The purpose of this FOSTERRAIL Factsheet is to provide:

- Description of the organisation of the railway research at a national level
 - from the governmental point of view for setting the political priorities and research strategies
 - from the stakeholder's point of view for performing the research
- Identification of strategic national railway research objectives and priorities, making available information on their developments and results. When available, information on multi-modal issues might be included

1	Table of contents
2	Executive Summary Railway transport in Greece is part of the whole transport system but this railway is not dominant. Transport research including railway is part of the overall research. Transport research is financed from the EU and national funds. The basic strategic document is the National Strategic Reference Programme.
3	Transport Research Policy and Research Initiatives
3a	Overview of the National transport policy with a focus on rail Research and innovation policy is planned for seven-year periods. For the last

	<p>programming period, the objectives, priorities and strategy of the research and innovation policy were set out in the Strategic Development Plan for Research, Technology and Innovation for 2007–2013 in the context of the National Strategic Reference Programme. The Plan also established a list of research priorities, which includes transport services and sustainable development. Now this plan will be updated for new planned period.</p> <p>Transport planning documents that set out the framework for transport development at national and regional level for the coming period are:</p> <ul style="list-style-type: none"> - Master plan 2020 for the city of Thessaloniki for transport infrastructure - Framework on the Rehabilitation and Restructure of the OSE (Greek Rail Organisation)
3b	<p>Current state-of-the-Art in rail transport research</p> <p>Railway research is part of the overall transport research. Railway research dealing with the technical university (Thessaloniki) and some private companies. The Greek Railways develop their own strategy.</p>
3c	<p>National transport research funding sources</p> <p>Transport research is financed through the general research funding, and through European and international funds. Public funding is allocated on a competitive basis by the Operational Programme Competitiveness and Entrepreneurship, which is the responsibility of the Ministry of Regional.</p> <p>European funds for transport research are available through the Framework Programmes and Structural Funds.</p>
4	<p>National rail research priorities</p> <p>All thematic of research areas are supported by the General Secretariat for Research and Technology through the Operational Programme Competitiveness and Entrepreneurship and the Regional Operational Programmes. In addition, some actions on improving research on human capital are supported by the Operational.</p> <p>Programme Education and Life Long Learning of the Ministry of Education.</p> <p>Part of the research priorities is also the development of railway transport aimed at:</p> <ul style="list-style-type: none"> - Development and maintenance of the railway infrastructure in relation to the overall transport system - Improving the quality of provided services - Improving safety and security.
5	<p>Overview of the rail research organisations and area of expertise</p> <p>The main actors in developing research and innovation policy at the political level are the Greek Government and the Parliament with its advisory body, the Permanent Committee for Technology Assessment.</p> <p>At the operational level, responsibility for research policy rests with the General Secretariat for Research and Technology of the Ministry of Education, Lifelong Learning and Religion.</p> <p>The formal body for scientific advice to the government is the National Council for Research and Technology.</p> <p>The Ministry of Transport, Infrastructure and Networks is responsible for planning and implementing national transport policy. Policy developed by the Ministry of Environment, Energy and Climate Change and the Ministry of Development, Competitiveness and Shipping is also important for transport research.</p>

	<p>National government departments and agencies are :</p> <ul style="list-style-type: none"> - Ministry of Development, Competitiveness and Shipping www.ypoiat.gr - Ministry of Education and Religious Affairs, Culture and Sports, Lifelong Learning and Religion www.minedu.gov.gr - Ministry of Environment, Energy and Climate Change www.ypeka.gr/Default - Ministry of Infrastructure, Transport and Networks www.yme.gr/index.php - National Council for Research and Technology www.gsrt.gr <p>The research is ensured by the technical universities (Thessaloniki) or by selected private companies. Greek railways are involved in research in terms of creating their own concepts and strategies.</p>
6	<p>National research data base (if any)</p> <p>No information</p>
7	<p>Overview of relevant national rail research projects</p> <p>No information</p>
8	<p>Participation in cross-border and EU funded rail research projects</p> <p>No information</p>

COUNTRY	ITALY
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Please provide a short overview of the national transport policy especially the railway related issues

Transport policy is developed and implemented by the Ministry of Economic Development, Infrastructure and Transport.

One of the documents defining transport policy is National Operational Programme Networks and Mobility for 2007–2013, and aims to ‘accelerate the implementation of an efficient, integrated, flexible, safe and sustainable transport system to ensure logistics and transport functional development’.

Please provide a short overview of the Transport Research Policy and Research Initiatives

Two key documents establish the background for research: the National Reform Programme for Innovation, Growth and Employment, and the Triennial National Research Programme 2011–2013. The National Research Programme 2011–2013 identifies thematic priorities for the national research policy:

- Cultural heritage
- Homeland security
- Sustainable mobility
- Health
- Information technologies
- Environment
- 'Made in Italy' (industrial sectors that characterise the national productive system)
- Agriculture, food and health
- Energy.

Please provide some information about National transport research funding sources

Transport research is funded through the general research framework and through programmes dedicated to transport. To promote larger R&D investment and to stimulate R&D projects in the private sector, the Italian State supports companies through grants and loans. These include the Fund for Applied Research managed by the Ministry of Education, University and Research, and the Fund for Technological Innovation managed by the Ministry of Productive Activities.

Please provide a short overview of the National rail research priorities

Please provide a short overview of the main rail research organisations and area of expertise

Please provide some information about the National research data base (if any)

Please provide a short overview of relevant National rail research projects

Please provide a short overview of participation in cross-border and EU funded rail research projects

Country - Latvia

Fact sheet reflecting the situation of the organisation of railway research at national level

The purpose of this FOSTERRAIL Factsheet is to provide:

- Description of the organization of the railway research at a national level
 - from the governmental point of view for setting the political priorities and research strategies
 - from the stakeholder's point of view for performing the research
- Identification of strategic national railway research objectives and priorities, making available information on their developments and results. When available, information on multi-modal issues might be included

1	Table of contents
2	Executive Summary <p>The railway network is under a stage of development and the rail gauge is Russian standard. In the past few years Latvia authorities have been working towards creating connections to the European rail network.</p> <p>Latvia is involved in project 'Rail Baltica' this rail will be connect Warsaw-Kaunas-Riga-Tallinn- Helsinki.</p>
3	Transport Research Policy and Research Initiatives
3a	Overview of the National transport policy with a focus on rail <p>Research in the rail sectors is usually conducted in the framework of projects that focus on the development of the national transport infrastructure.</p>
3b	Current state-of-the-Art in rail transport research <p>The majority of transport research in Latvia is carried out within universities, into which the Ministry of Education and Science is currently integrating specialised state research institutes. The Latvian Transport Development and Education Association (LatDEA), a non-government organization, also plays a pivotal co-ordination role. LatDEA's main objective is to support the modernisation of Latvia's transport sector, by increasing its research potential and by improving the quality of its academic and training institutions.</p>

3c	<p>National transport research funding sources</p> <p>At ministerial level, the Ministry of Education and Science is responsible for preparing the national policy on science and technology development. This includes preparing requests for annual budget allocations for research in line with the strategy approved by the government. The ministry is also responsible for coordinating international collaboration programmes.</p> <p>Transport research is also financed from funds available through the Ministry of Economics for innovation research, grants to the entrepreneurs and state support programmes available from the Investment and Development Agency.</p>
4	<p>National rail research priorities</p> <p>The long term objective of transport policy is to ensure the systematic maintenance and development of an effective, sustainable, integrated, environmentally friendly, balanced and multimodal transport system that will meet the increasing demands of the national economy, international trade and of the population for a qualitative and quantitative transport service ensuring safety, reliability and reasonable prices. The main problems to be solved in the railway sector are refurbishment and modernisation of infrastructure, increase of safety levels and increase of throughput capacity. In public transport, especially in the railway sector, it is necessary to resolve issues concerning modernisation of rolling stock and establishment of an appropriate infrastructure. Research in the sector is driven by these problems and oriented to find necessary solutions.</p>
5	<p>Overview of the rail research organisations and area of expertise</p> <p>Riga Technical University - Faculty of Transport and Mechanical Engineering</p> <p>The faculty is the successor of the Riga Polytechnicum Department of Mechanical Engineering, established in 1864. The faculty has also integrated several structural units of the Faculty of Appliances and Automation, the Institute of Railway Transport, the Mechanical Engineering Faculty and the Faculty of Radio Engineering and Computer Systems of the former Riga Aviation University.</p> <p>As there is no other body responsible for railway research.</p>
6	<p>National research data base (if any)</p> <p>In Latvia has not been identified national database of railway research projects.</p>
7	<p>Overview of relevant national rail research projects</p> <p>Detailed technical study and environmental impact assessment of the Latvian section of the European gage railway line Rail Baltica – Ministry of Transport of Republic of Latvia</p>
8	<p>Participation in cross-border and EU funded rail research projects</p> <p>B2B LOCO Project B2B LOCO (BALTIC - TO - BALKAN NETWORK FOR LOGISTICS COMPETENCE) is a 7th Framework Programme project, co-ordinated by the Institute of Logistics and Warehousing from Poznan, Poland.</p> <p>Rail Baltica Growth Corridor. BSR INTERREG IV B programme. (2011-2013) Rail Baltica Growth Corridor aims to improve the competitiveness and accessibility of Baltic</p>

	<p>cities and regions by increasing their interaction and collaboration. RBGC creates a cooperation platform that observes the needs of transport sector and its customers in line with green growth corridor principles.</p> <p>Baltic COntainer RAILway Transit (CORAT). EU Marco POLO II programme. 2008.</p>
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Country - Lithuania

Fact sheet reflecting the situation of the organisation of railway research at national level

The purpose of this FOSTERRAIL Factsheet is to provide:

- Description of the organization of the railway research at a national level
 - from the governmental point of view for setting the political priorities and research strategies
 - from the stakeholder's point of view for performing the research
- Identification of strategic national railway research objectives and priorities, making available information on their developments and results. When available, information on multi-modal issues might be included

1	Table of contents
2	<p>Executive Summary</p> <p>The railway network is under a stage of development and the rail gauge is Russian standard. In the past few years Lithuania authorities have been working towards creating connections to the European rail network.</p> <p>Lithuania is involved in project 'Rail Baltica' this rail will be connect Warsaw-Kaunas-Riga-Tallinn- Helsinki.</p>
3	Transport Research Policy and Research Initiatives
3a	<p>Overview of the National transport policy with a focus on rail</p> <p>The research policy goals are mainly set by the Lithuanian Innovation Strategy for 2010–2020. New long-term Research and Higher Education Strategy will be detailed on the basis of Higher Education and Research Foresight results. The implementation strategy (2007–2013) for EU Structural Funds also supports public R&D development and facilitates company R&D.</p> <p>The main transport planning document in Lithuania is the Long-term (to 2025). Development Strategy of the Lithuanian Transport System and Transport and Transit development strategy (to 2020).</p> <p>Research in the rail sectors is usually conducted in the framework of projects that focus on</p>

	the development of the national transport infrastructure.
3b	<p>Current state-of-the-Art in rail transport research</p> <p>National research policies in general are developed and implemented by the Department of Science and Technology under the Ministry of Education and Science in cooperation with the Science Council of Lithuania. The main source of funding for research is the national ministry budget. Railway research policies are partly implemented by the Ministry of Transport and Communication by the Calls for Research Tenders. The main source of funding for research is the ministry budget.</p>
3c	<p>National transport research funding sources</p> <p>There are three main types of research funding in Lithuania.</p> <p>Internal research programs at universities (local research activities). The programs usually are freely selected by university units and/or university staff. The duration of programs is up to five years. The programs are approved only by local documents of universities and university units.</p> <p>The National research grants usually are general and not focused on concrete field of research. There was no transport dedicated national research grants during past 20 years.</p> <p>The applied research service contracts in many cases are more service contracts instead of research contracts. Some service contracts are called research projects</p>
4	<p>National rail research priorities</p> <p>The long term objective of transport policy is to ensure the systematic maintenance and development of an effective, sustainable, integrated, environmentally friendly, balanced and multimodal transport system that will meet the increasing demands of the national economy, international trade and of the population for a qualitative and quantitative transport service ensuring safety, reliability and reasonable prices. The main problems to be solved in the railway sector are refurbishment and modernisation of infrastructure, increase of safety levels and increase of throughput capacity. In public transport, especially in the railway sector, it is necessary to resolve issues concerning modernisation of rolling stock and establishment of an appropriate infrastructure. Research in the sector is driven by these problems and oriented to find necessary solutions.</p>
5	<p>Overview of the rail research organisations and area of expertise</p> <p>Vilnius Gediminas Technical University - Faculty of Transport Engineering - Department of Railway Transport</p> <p>Vilnius Gediminas Technical University is a prestigious Lithuanian University, fostering highly qualified and creative specialists. The University is the leader among the institutions of technological science education, ensuring modern studies, orientated to the labour market</p> <p>As there is no other body responsible for railway research.</p>
6	<p>National research data base (if any)</p> <p>In Lithuania has not been identified national database of railway research projects.</p>
7	<p>Overview of relevant national rail research projects</p>

	<p>Research is oriented to solve the main problems in the railway system and mostly aimed at modernization of the railway network by implementing modern communication technologies. Most of the projects are infrastructure related and cover very concrete topics, such as implementation of specific means or purchases of new rolling stock (this type of project is also considered to be research in Lithuania). Main research topics and relevant project:</p> <p>1. Developing plans and guidelines to implement integrated transport policies. Researchers aim to develop specific plans covering legal framework and infrastructure measures in order to create a more sustainable railway system and improve operations. Example projects are very closely related to the projects in road transport (e.g. development of logistics centres) and marine sector, since the main goal is to increase cooperation and integration of different transport modes.</p> <ul style="list-style-type: none"> - Analysis of Lithuanian logistics market and research of public logistics centres competitive ability in the region; - Analysis of intermodal transport development and principles of management of logistics centres; - Modelling of freight transport infrastructure development; - Research of technologies to transfer containers, trailers and semitrailers to Western Europe. <p>2. Development of railway infrastructure. Research aims at eliminating the technological gap between old member states and Lithuania, by solving such problems as:</p> <ul style="list-style-type: none"> - different width of railway gauge; - different technological, operational and organisational concepts and lack of interoperability between Lithuania and rest of EU. <p>Example projects could be INLOC, EAST-WEST</p>
8	<p>Participation in cross-border and EU funded rail research projects</p> <p>B2B LOCO Project B2B LOCO (BALTIC - TO - BALKAN NETWORK FOR LOGISTICS COMPETENCE) is a 7th Framework Programme project, co-ordinated by the Institute of Logistics and Warehousing from Poznan, Poland.</p> <p>Rail Baltica Growth Corridor. BSR INTERREG IV B programme. (2011-2013) Rail Baltica Growth Corridor aims to improve the competitiveness and accessibility of Baltic cities and regions by increasing their interaction and collaboration. RBGC creates a cooperation platform that observes the needs of transport sector and its customers in line with green growth corridor principles.</p> <p>Baltic Container Railway Transit (CORAT). EU Marco POLO II programme. 2008.</p> <p>INLOC - Integrating Logistics Centre Networks in the Baltic Sea Region</p>

COUNTRY	MARCEDONIA
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Please provide a short overview of the national transport policy especially the railway related issues

The [National Transport Strategy 2007-2017](#) is the main document for the development of

transport in Macedonia which includes the action plan for achieving country's strategic goals.

The main objectives of the national transport strategy are:

- to promote economic growth by building, enhancing, managing and maintaining the transport services, the infrastructure and the networks to maximize their efficiency;
- to promote an integrated and interconnected transport network that establishes effective service to the users in Republic of Macedonia;
- to promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network;
- to protect the environment and to improve public health by building and investing in public transport and other types of efficient and sustainable transport which minimize emissions and consumption of resources and energy;
- to improve the safety by reducing accidents and enhancing the personal safety of pedestrians, cyclists, drivers, passengers and staff; and
- to improve integration by making journey planning and ticketing easier and to ensure smoother connections between different forms of transport.

These objectives should be achieved by:

- modernisation and extension of the infrastructure on Corridors X and VIII as to enable transport service delivery to be improved both in qualitative and quantitative terms and in so doing contribute to providing transport that is safer, quicker and more reliable;
- construction of modern transport infrastructure and facilities with enhanced safety features that, together with modern targeted safety awareness campaigns, contribute to safer and more secure transport. These benefits accrue to all transport users;
- initiation of the public transport operators' forum which should address ways to promote better integration between modes and thereby increase public transport patronage by providing easy and convenient ways to use the various modes;
- modernisation of the transport networks in order to provide improved mobility for all, especially those in rural areas;
- high quality and performance of transport links enabling improved access to health centres and facilities.

Please provide a short overview of the Transport Research Policy and Research Initiatives

The link between national transport policy and transport research, is manifested through the objectives set in the transport strategy and areas of transport research defined through implemented transport research projects.

Two major Laws regulate the functioning of the scientific and research activity in the country:

- The Law on Scientific and Research Activity; and
- The Law on Higher Education

While the former regulates the principles of establishment and functioning of higher educational institutions and outlines their primary roles, the latter defines the scientific and research activity, provides outline of the institutions carrying scientific and research work and the structures responsible for creating the national research policy.

Additionally, the national research priorities are being determined by the MoES every four years through carrying a National Program for Research Activity.

Please provide some information about National transport research funding sources

There is no special or separate funding for transport research in Macedonia. The state budget

has the following main budget lines for R&D in general:

- direct budget fund for the Macedonian Academy of Sciences and Arts;
- budget line for the Ministry of Education and Science, responsible for education and R&D. The Ministry finances the education and R&D activities of the state universities and public state institutes as public research performing organisations;
- budget subsidies to the Ministry of Education and Science for realisation of the programme of scientific research, technological development and technical culture;
- budget lines for various ministries with research components.

Please provide a short overview of the National rail research priorities

The following thematic research priorities have been identified in FYR Macedonia

- Sustainable development
- Water resource management
- Energy
- New materials
- Environmental protection
- Information and communication technologies
- Health
- Biotechnology
- Production of high quality food
- Geological science and engineering.

As seen from the list above transport research is not stated as a priority in FYR Macedonia. Nevertheless, the official political standpoint that can be found in the national transport documents is that transport policy should increasingly favour sustainable public transport. There are quite a few on-going research projects aimed towards sustainable transport supported by EU research programs and domestic public institutions

Please provide a short overview of the main rail research organisations and area of expertise

The Department for Traffic Engineering at the Faculty of Technical Sciences - Bitola and **Department of Road and Railway Infrastructure** at the Faculty of Civil Engineering - Skopje are the most important research institutions in the field of Transport sector in the country. The key competencies of the Department are traffic engineering, traffic planning, security of transport, intelligent transport system, urban transport, public transport, logistic, transport regulation, etc.

The **Department of Road and Railway Infrastructure at the Faculty of Civil Engineering Skopje** strives to effectively and efficiently deliver practical, innovative, knowledge-based solutions addressing the infrastructure needs of the transport sector. The researchers play a leading role in the development, application and transfer of processes and technologies for the planning, design, construction, maintenance and management of transport infrastructure. The research includes all aspects of transport infrastructure planning, design, construction, maintenance and rehabilitation, including the assessment of socio-economic evaluation, materials and pavement behaviour, and performance modelling.

Please provide some information about the National research data base (if any)

There is a database of researchers in transport as a result of the TransBonus project and it includes descriptions and references to certain research activity and certain transport research projects. Additionally, important research institutions in the Republic of Macedonia (mainly universities) publish information about their research activity, including information about important international (transport) research projects.

Please provide a short overview of relevant National rail research projects

There are projects based on state funds upon request of public administration to support planning and managing in the transport sector. These transport research projects have contributed to documents such as the National Transport Strategy, documents for technical conditions of vehicles, traffic safety and development, application and transfer of processes and technologies for planning, design, construction, maintenance and management of transport infrastructure;

- **Privatization process of Macedonian Railways Transport Shareholding Company-Skopje** (study for privatization), 2008, project financed by Ministry of Transport and Communications.
- **Provision of means from the budget of the Republic of Macedonia/budgets of the units of the local self-government for 2009 for financing services of public interest in the railway transport of passengers, depending on the results gained from the Study** (study for the services from public interest in the railway transport of passengers), 2008, project financed by Ministry of Transport and Communications.

Please provide a short overview of participation in cross-border and EU funded rail research projects

The countries of Western Balkans are associated to the EU's 7th Framework Programme for Research. FYR Macedonia participated in 6th FP and is also participating in 7th FP. The Ministry of Education and Science provides the administrative, technical and financial support for the participation from the FYR Macedonia in European research and development programmes in FP7 as well as in other EU programmes.

A representing project in the rail sector is "Customer-driven Rail-freight services on a European mega-corridor based on Advanced business and operating Models" (CREAM) in which Macedonian Railways is participated.

The CREAM Project has been designed to respond to the increasing demand for rail-based logistic systems, and the implementation of change in the European railway area, which has been initiated by the European legislation.

COUNTRY	MONTENEGRO
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Please provide a short overview of the national transport policy especially the railway related issues

The Ministry of Transport, Maritime Affairs and telecommunications announced the [Transport Development Strategy of Montenegro](#) in 2008. Every year Ministry announces progress reports on the strategy.

According to the new sustainable development concept, financing of the infrastructure

development should be provided, in a way that eliminates bottlenecks in the traffic and achieves a balance between the use of maritime and rail traffic relative to the road traffic. Regarding the operating level, it is necessary to ensure inter-modal development and implementation of security and quality of services at the centre of activity. Active participation in decision-making processes in transport-logistic chain must be provided for users of transport. Undeveloped road network, problems existing in the railway sector related to the condition of the infrastructure and out-dated vehicles, requirements for more efficient airport operation, and low capacity utilization of Luka Bar, do not support sufficiently development of economic activities.

Also, it is necessary to ensure inter-modal transport development and improvement of safety and quality of services. Identified problems, like undeveloped road network, problems in the railway sector related to the condition of the infrastructure and obsolete rolling stocks, requirements for efficient airport operation, and low capacity utilization of port of Bar, do not support development of economy.

Basic goals of strategic development of Montenegro's transport system are as follows:

1. Improvement of safety and security, in order to save human lives, material values and to preserve state resources;
2. Integration in the European Union, through connection to TEN-T and improvement of competitiveness of national transport economy;
3. Improvement of transport services quality;
4. Stimulation of economic growth through more efficient and less expensive transport;
5. Minimization of negative impacts of transport development and traffic infrastructure on environment and society in general.

Please provide a short overview of the Transport Research Policy and Research Initiatives

At the end of 2010, Montenegro introduced a Law on Scientific Research Activity as the most important legislation in this area. This Law replaced the previous one from 2005. Although, the Strategy for the scientific-research activity of Montenegro (2008-2016) was entered into force prior the new Law, the document is still in force.

Statistical indicators on investments into Scientific Research Activities (SRA) in Montenegro for the last two years, after the adoption of the Strategy, were very low, so a new Law is expected to improve this unfavourable situation. Assessment, although there are no fully reliable data, is that real investment in science in 2010 amounted to maximum 0.1% of country's GDP.

Please provide some information about National transport research funding sources

The Ministry of Education and Science is responsible for research funding and implementation of the research programmes. In December of 2010 this responsibility was handed over to the newly formed Ministry of Science.

Due to lack of funds the Ministry of Education and Science in 2010 did not announce a competition for co-financing national development research projects that encourage innovation. In order to develop human resources and infrastructure, scientific research, the Ministry of Education and Science in 2010 published the following calls for funding:

1. Competition for the co-scientific research,
2. Competition for co-procurement of capital, medium and small scientific and research

equipment, and

3. Competition for co-investments in scientific infrastructure in the construction and renovation of facilities used for the scientific research carried out in 2008~2010.

Please provide a short overview of the National rail research priorities

The new Law on Scientific Research Activity and supporting Strategy encourage bilateral cooperation in the region and wider. In 2011 a call was announced with criteria for participation in joint research projects with the Republic of Austria and the Republic of Slovenia.

Unfortunately, in previous periods there was no strong liaison between transport research policy and national transport plan. They only have in common some general priorities and directions.

Please provide a short overview of the main rail research organisations and area of expertise

The most relevant transport research organisations in Montenegro are: the University of Montenegro, Port of Bar, Institute for transportation and the Ministry of Education and Science, which supports these activities. However rail research projects in the previous period, were not supported and performed in Montenegro. Focus of the activities was to improve the state of infrastructure and rolling stock, along with on-going process of restructuring and separation of infrastructure and transport services - operation.

Please provide some information about the National research data base (if any)

Montenegro implemented national [E-CRIS system](#) which includes a database of research organisations, researchers and research projects. Currently, in the system E-CRIS.CG are publicly available (initial) data on 1025 researchers and 33 research organisations.

Please provide a short overview of relevant National rail research projects

Rail research projects in the previous period, were not supported and performed in Montenegro. Focus of the activities was to improve the state of infrastructure and rolling stock, along with on-going process of restructuring and separation of infrastructure and transport services - operation.

Please provide a short overview of participation in cross-border and EU funded rail research projects

Montenegro has been participating in the EU Framework Programmes from FP6 as a 'third country', and from January 2008 as an associated country in FP7 with equal right to participate in all calls for proposals.

None of the projects in FP6 and FP7 were devoted to Transport topics due to deficiency of transport research experts.

COUNTRY

The Netherlands

Please provide a short overview of the national transport policy especially the railway related issues

Mobility is regarded as essential to the Dutch society, both for the facilitation of economic growth, as well as for the preservation of social cohesion. The train plays a crucial role. The Ministry of Infrastructure and Environment has developed the Long Term Rail Agenda (LTSA) in order to define the direction of rail development for the next fifteen years. This policy vision and its ambition and aims have been made operational by ProRail and NS at the request of the Ministry.

Please provide a short overview of the Transport Research Policy and Research Initiatives

1. A better coordination and cooperation between the public transport authorities for the best door-to-door service.

Core ambition is an optimal journey 'door to door'. The government wants nationwide public transport systems allow better connect to create a Network Netherlands. It is the determination of the main public transport hubs and ports (in Randstad and regions) in the rail network is crucial. Better connections between train, tram, bus and metro network will increase the strength and attractiveness of public transport.

The realization of this ambition requires close cooperation and involvement of many parties: government, local authorities, NS, FMN parties (Arriva, Connexion, Syntus and Veolia), ProRail, city and regional carriers and passenger organizations (like Rover). Therefore the design of regional- and national Public Transport and Railway timetables and the inclusion of identical agreements in the transport concessions key instruments. The plans and ideas from the various parties will be linked as far as possible.

2. First, better than more

The Netherlands has one of the busiest tracks in the world, many trains run on time and transport by rail is safe. During the coming years, the performance should be even better, especially during rush hour in the Randstad. Then, the frequencies can be increased. Given the problems of recent years, this sequence seems logical. The ambition remains the starting point for future investments. The necessary changes to the infrastructure to make a significant contribution to improving reliability and safety of the track.

ProRail and transporters will take greater account of the reliability when making schedules and assessing capacity applications. The government wants travelers to experience as little as possible failure of trains, long delays or "black day". It is paramount to achieve service under virtually all weather conditions and in to provide higher frequencies for the future. Along with the joint proposal of NS, ProRail, FMN parties and rail freight forwarders for control and adjustment, this will deliver the important building blocks to further increase the reliability of the transport system. For the short term it is the aim to reduce red signal passages with the STS-improvement plan (including the continued rollout of ATB). The introduction of ERTMS will further improve the safety and security. Also a national plan has been made for the reduction of incidents which will be implemented from this year. All carriers are enabled to inform their customers well, to make use of services and facilities to establish itself on the use of services and facilities and to present themselves at the stations stop their trains. The State ensures that this happens fairly and AC M enforces this. It will be investigated whether a separation between ownership and operation of stations can contribute to the effects thereof.

3. Cultural change needed

The focus of the railway companies need to push themselves to public service. ProRail is the implementing organisation for public infrastructure, traffic and capacity allocation. NS is the social service on the track at which the travelers one place, two and three stand. ProRail and NS should also exhibit the behavior that suits their great social responsibility.

4. Tighter control by the government, no change in the arrangement

Until now the national government only gave directions based on an annual average performance. This is no longer adequate. It is the job of the government to translate the customers' needs into a performance fitting to the traveler's needs and to steer these performances. It is crucial that the government acts as an organisation which grants the concessions and as legislator and shareholder. Based on these roles it should steer towards the same aims: customer needs! The government should steer towards a continuous improvement, without taking the lead. She should steer based on a clear set of performance which are periodically reviewed. As a shareholder in ProRail the government should use its influence more active than before in the appointment of directors and auditors.

The cabinet has clearly decided for a stronger steering in view of the great importance of improved cooperation between the IM and all carriers and has chosen not to intervene in the planning.

ProRail and NS now have a stronger bridge between them. Thus, the flaws from the past of the overly strict separation will be mended.



TRAVEL BY TRAIN will become:

- Structurally more reliable and thus more attractive to travelers, as more focus is on specific places, times and seasons in which performances on the track are insufficient
- "Time table free" for the traveler, by increasing the frequencies of trains on busy routes to at least 6 times per hour (ie at least one train every 10 minutes);
- Direct for as many travelers, because the number of inter-changes for the traveler as well as the experienced travel time is minimized;
- Offers the traveler a better experience for its door-to-door travel where within an attractive station area a better connection will be realised with other carriers and other modalities, such as (OV) bicycle rental, (zone) cab, buses and trams
- Offers travelers a higher quality product, with 50% more use of a train, to and from economic centers, for a investment budget comparable to PHS.

This improvement for the travelers is realized through effective collaboration between ProRail and NS, along with other partners, based on a joint investment agenda, a shared improvement approach and concerted tuned performance indicators.

Please provide some information about National transport research funding sources

Please provide a short overview of the National rail research priorities

Please provide a short overview of the main rail research organisations and area of expertise

Please provide some information about the National research data base (if any)

Please provide a short overview of relevant National rail research projects

Please provide a short overview of participation in cross-border and EU funded rail research projects

Country – Poland

Fact sheet reflecting the situation of the organization of railway research at national level

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- Identification of strategic national railway research objectives and priorities, making available information on their developments and results. When available, information on multi-modal issues might be included

1	Table of contents
2	Executive Summary <p>The railway is very important part of transport system in Poland. This corresponds to the position of railway research. Railway is important part of general transport strategy document, some of strategy documents are focused only for railway. Poland research institutions work on European research bodies and participate on the solution of European research projects.</p>
3	Transport Research Policy and Research Initiatives

3a	<p>Overview of the National transport policy with a focus on rail</p> <p>Considering the European dimension special attention of transport research policy and research initiatives is focused on ecological matters of transport towards achievement of transport sustainability. The realization of the sustainable transport idea is related directly with supporting environmentally friendly transport modes for example such as railway transport.</p> <p>The transport policy framework is determined by several general strategic documents of national importance and key industry documents on the development of specific transport modes.</p> <p>Main document focused on state transport policy is “State Transport Policy for 2006 – 2025” which is continually updated. This document considered to be a roadmap for the Ministry of Infrastructure and other ministries with regard to transport as well as for transport researchers for project proposals.</p> <p>In addition, there are strategic documents focusing directly on rail.</p> <p>They are :</p> <ul style="list-style-type: none"> - Strategy for Rail Transport up to 2013 – it will be updated. - Master Plan for Rail Transport up to 2030.
3b	<p>Current state-of-the-Art in rail transport research</p> <p>The railway research in Poland is concentrated in some research institutions and universities. These organizations are engaged in the areas resulting from the essential strategic documents and participate in the solution of European research projects.</p> <p>The main areas of scientific and R&D activities focused on railway might be summarised as follows: organization and management in transport, logistics and marketing of rail transport, construction and maintenance of railways and urban rail, automation and control traffic, telecommunications and data communications, rail vehicles, electric traction power supply, protection of people and goods in the consignment, environment oriented matters, study the properties of materials and components as well as assemblies and structures, assessment of technical facilities, research related to accidents or special events.</p>
3c	<p>National transport research funding sources</p> <p>Central Budget, self-government budgets as well as local budgets coordinated by local authorities; Structural Funds including central operational programmes as well as regional operational programmes accepted by EC.</p> <p>Moreover, the funding is based on public-private partnership on the basis of long-lasting contracts.</p>
4	<p>National rail research priorities</p> <p>Main strategic goal :</p> <p>Undertaking of actions to promote and support the development of railway transport in the scope and time which are the most appropriate for current societal expectations, environmental protection requirements and Poland’s economic potential.</p> <p>The railway transport should be achieve competitive position in relation to other transport sectors.</p>

	<p>Research priorities :</p> <ul style="list-style-type: none"> - Increase of operational and economic effectiveness within rail transport sector. - Systematic increase of service quality for users. - Effective management of human resources & employment optimisation. - Rationalization of passengers and cargo transport in corridors of Transport-European transport network (TEN-T) - Enabling wide usage of existing railway infrastructure - Increase of cargo transport including intermodal transport - Increase safety and security - Reduction of transport's negative influence on environment
5	<p>Overview of the rail research organisations and area of expertise</p> <p>There are no strict National Transport Research Centres in Poland. Most of them are operating under the legislation of the Act on Code Commercial (Official Journal of 8 November 2000) and under the Act of the Principles of Science Funding. However, the Ministry of Science and Higher Education has just finished the complex process of evaluation and giving the note/certification of all scientific and R&D oriented units. The evaluation has been taken e.g. the issues related to number of different types of projects; results implementation into market (in market commercial value); publications in national and international magazines; participation in different research programmes (FPs, other European Initiatives etc.); human resources potential.</p> <p>The railway research organization in Poland are :</p> <ul style="list-style-type: none"> - Department of Computer Science, Management and Transport; - Institute of Organization and Management in Industry; - Railway Engineering Institute; - Institute of Logistic Systems; - The Rail Vehicles Institute "TABOR" - Institute of Innovation Techniques EMAG; - Poznan University of Technology – Machinery and Transport Department; - Radom University of Technology – Transport and Electrical Engineering Department; - Gliwice University of Technology – Transport Department; - Warsaw University of Technology – Transport Department;
6	<p>National research data base (if any)</p> <p>National database on R&D research activities is developed and maintained by the Information Processing Centre (OPI). The main task of OPI is to facilitate rapid access to current and comprehensive information about Polish science. There is a collection of data that can be used to create science and innovation policy of the state and to prepare analysis and statistics. Implemented in the OPI work involves the adaptation of existing standards in the country for scientific information, norms and standards of the European Union. The database maintained by the Information Processing Centre since 1991, is the most complete and up to date database of its kind in Poland, made available to users free of charge. Since its inclusion on the Internet (1999) it has seen a steady increase in interest owned resources from both institutions and individual users. The content of the database is as follows:</p> <p>- Institution :</p> <p>Science and research and development (i.e., state universities and private institutions and</p>

	<p>institutes departmental PAN) institutions and organizations supporting science (archives, research libraries and museums) government bodies, institutions and NGOs responsible for the design and implementation of state scientific policy, societies, scientific associations and foundations working in the field of science;</p> <p>- People of science: Poles (holding at least a doctoral degree); Polish scientists abroad; Foreigners working in the Polish scientific institutions and research and development, and members of the Academy of Science, as well as promoters and reviewers of Polish research;</p> <p>- Scientific papers (SYNABA): Scientific work, research and development; doctoral and others;</p> <p>- Conferences, Fairs and Exhibition: organized by the Polish science-related institutions;</p> <p>- Research projects : own research projects and supervised projects, research and development projects, commissioned research projects, targeted research projects.</p> <p>- Databases Polish technologies : Services designed to facilitate communication between the scientific community and the organizers of business ventures based on advanced technologies and requiring support in the form of professional research and development facilities. The most important element which could be treated as separate database is called SYNABA. At the moment there are over 100 000 records related to R&D and scientific projects included. The SYNABA database was developed in 1999. Each record includes the following information: start and completion dates; title; information of the main executor of the project; information of R&D unit/institute where the project was executed; short description of the project; key words; publications.</p>
7	<p>Overview of relevant national rail research projects</p> <p>National rail research project are focused for:</p> <ul style="list-style-type: none"> - Environmentally friendly approach to rail including the reduction of fossil fuel based propulsion as well as the reduction of emissions, enhancement of overall comfort in the meaning of noise and vibrations significant reduction; new propulsions based on alternative and/or renewable energy sources; new advanced materials considering their LCC qualities; - Interoperability in railway transport including advanced management systems related to transport processes within European, regional and local networks; - Safety and security in the meaning of advanced information processing technologies, systems of operational control, technical and organisational enhanced solutions <p>with</p> <ul style="list-style-type: none"> - regards to dangerous goods, new methods and systems for improving security of passengers (e.g. terrorism problems); - Attractiveness of railway transport in the context of the provision of competitive services, e.g. unified procedure for ticketing systems, ICT based information exchange between different operators; unified and enhanced procedures related <p>to</p> <ul style="list-style-type: none"> - infrastructure development and/or maintenance. <p>Example:</p> <ul style="list-style-type: none"> - Project INTERGAUGE - safety good movement with 1435 and 1520 (1524) mm track gauge

	railway
8	Participation in cross-border and EU funded rail research projects No information.

COUNTRY	PORTUGAL
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Please provide a short overview of the national transport policy especially the railway related issues

Construction of transport infrastructure is a hot topic in the national transport policy. The Priority Infrastructure Investment Programme sets out the priority projects for the coming years. Another document relevant to transport planning is a plan published by the Portuguese Government for eleven logistics parks to be completed in 2013.

Please provide a short overview of the Transport Research Policy and Research Initiatives

Research policy is defined by the current Portuguese Government (which took office in mid 2011), builds on the achievements of the previous Governments, and stresses the need for excellence and efficiency in national research. The Government Programme defines the objectives of the scientific policy. Policy coordination on research is also a part of the National Strategic Reference Framework for 2007–2013.

The Ministry for Education and Science is responsible for designing and implementing research policy and for cooperation in international research. The law establishing the new organisational structure for the Ministry of Education and Science, published in December 2011, foresees a National Council for Science and Technology, which will be the main body for 'cross-cutting science and technological matters'. The Ministry of Economy and Employment plays an important role in promoting research and innovation in private companies.

These Governmental institutions are supported by the Foundation for Science and Technology, which operates as the national research council, and the Innovation Agency, which promotes innovation and scientific development by facilitating private-public cooperation.

The Ministry of Economy and Employment is also responsible for designing, implementing, and executing and evaluating policies on transport development.

Please provide some information about National transport research funding sources

Funding for research, including transport research, is mainly provided by public authorities:

- Ministry of Education and Science
- Ministry of the Economy and Employment.

Other ministries also allocate funds for R&D, but to a lesser extent. Research can also be funded through the National Strategic Reference Framework Operational Programmes. Academic research is also funded by the Foundation for Science and Technology.

The following thematic programme funds research on transport related topics:

Projectos Demonstradores

Supports pilot projects that develop technologically innovative solutions and promotes their use in industrial production.

www.adi.pt/demtec.htm

Please provide a short overview of the National rail research priorities

-

Please provide a short overview of the main rail research organisations and area of expertise

-

Please provide some information about the National research data base (if any)

-

Please provide a short overview of relevant National rail research projects

-

Please provide a short overview of participation in cross-border and EU funded rail research projects

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COUNTRY	SERBIA
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Please provide a short overview of the national transport policy especially the railway related issues

The main transport policy document regarding the National Transport Plan is the Strategy of railway, road, water, air and intermodal transport development in the Republic of Serbia from 2008 to 2015. As a support action to the strategy announced by the Ministry for Infrastructure, realization of the General Master Plan for Transport in Serbia (GMTS) was financed via the EU funding programme CARDS. GMTS have proposed a "rolling" investment programme for the transport sector in the period up to 2027 with a list of projects important for the future development of the transport system for all transport modes.

Due to insufficient utilization of line capacity, as well as the uneven distribution efficiency, the majority of the rail traffic takes place on a small part of the railway network, and with the increase of traffic in the future it is expected that many sections of Corridor X will be critical in terms of capacity, which is subject to poor maintenance of railway tracks.

The first priority activity is to provide sufficient funding and to properly maintain the infrastructure and rolling stock. Due to significant delays in maintenance, major works will be necessary for extra-ordinary maintenance of the tracks to bring them back to projected state.

For the next phase the following projects are identified by their importance:

- Projects relating to Corridor X - increase of designed speeds to 160 kph, establishment of double track railway, application of modern signal-safety devices and systems in compliance with European standards,
- Projects related to modernization of the railways which connect Serbia with neighbouring states, which have not been defined within international corridors and that have regional significance,
- Connecting with ports and other transportation nodes (hubs) with the aim of establishing closer links with other modes of transport.

In GMTS all identified development projects are described with their investment costs and maintenance costs.

Please provide a short overview of the Transport Research Policy and Research Initiatives

The [National strategy for science and technological development](#) defines the principal direction (priorities) of Serbia's development in the S&T field. In this Strategy, transport is not recognized as a national priority but transport-oriented projects and research activities will be implemented through the Technological Development Programme, scientific field: Transport, Urban Planning and Civil Engineering.

With regard to international collaboration, strategy calls for: proactive deepening of links with institutions leading FP7 projects with Serbian participation; more support for Serbian teams with FP7 coordination; proposals to leading institutions in priority fields (joint postdoctoral studies, exchanges, joint projects) and sets the goal of becoming a CERN member State by 2011.

Development and strengthening of the Regional Research and Testing Centres is a precondition for the development of safe and sustainable transport. Enhancement of a testing centre for railway vehicles in Kraljevo within the FP7 project SeRViCe supported by MSTD may serve as one positive example.

Please provide some information about National transport research funding sources

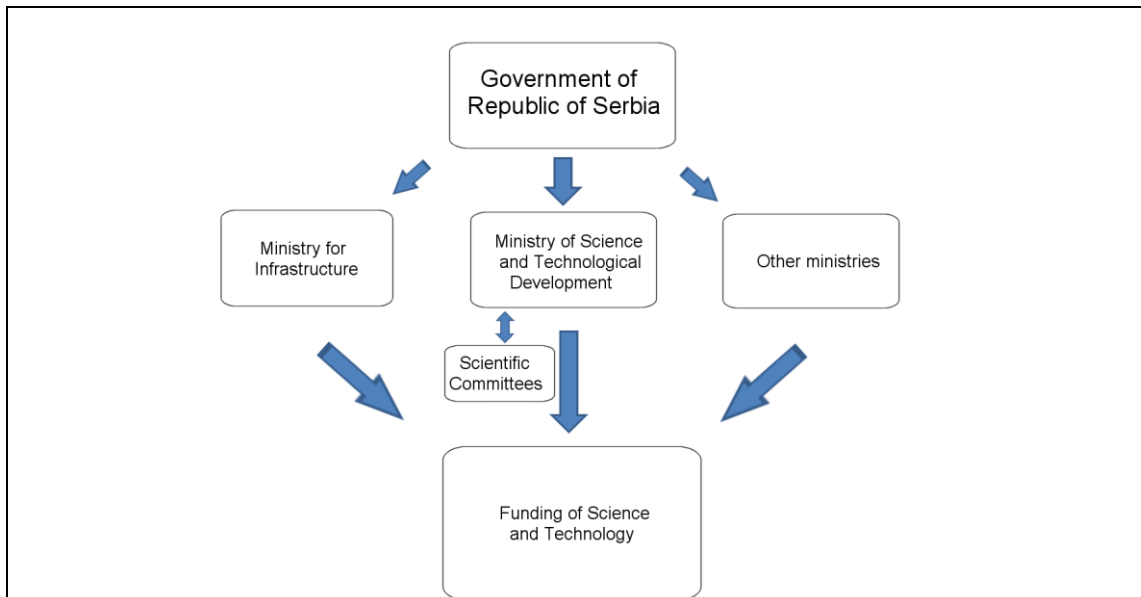


Figure 2 Scheme of the research funding in Serbia

The national body responsible for funding of research projects and programmes in the Republic of Serbia is the Ministry of Science and Technological Development. The Ministry defines the strategy of the development of science and technology and ensures the implementation of this strategy through financing and monitoring of research projects. Government approves funding for the implementation of projects proposed and supported by the Ministry of Science and Technological Development.

Please provide a short overview of the National rail research priorities

The most discussed and analysed topics in transport research projects are related to addressing various applications of intelligent transport system in all transport modes. Safety aspects, particularly passenger passive safety elements have been developed for railway vehicles. Environmental impacts in the case of future extensive transport increase regarding emissions and noise mitigation have been predicted and suggestions for controlling these impacts have been made. Energy efficiency, strategic considerations and supply chain management in the transport system are also in the list of researched topics in Serbia. The results of these projects are implemented in the national regulations, standards regarding safety issues and environmental laws. Also results are reflected on improvements in transport system organisations and economics or as modernisations of the transport means in Serbia.

Please provide a short overview of the main rail research organisations and area of expertise

The most relevant transport research organisations performing the majority of the research activities are the faculties and state owned institutes such as: Faculty of Transport and Traffic Engineering - University of Belgrade, Faculty of Technical Sciences - University of Novi Sad, Institute "Mihailo Pupin", Belgrade, Institute "Kirilo Savić", Faculty of Mechanical Engineering - University of Belgrade and Faculty of Mechanical Engineering - Kraljevo.

University of Belgrade - Faculty of Transport and Traffic Engineering

The Faculty of Transport and Traffic Engineering, University of is an interdisciplinary research organization within The University of Belgrade, oriented, first of all, to resolving problems in all

aspects of transport and traffic engineering and communication. The Faculty has Railway Transport and Traffic Engineering department.

University of Belgrade – Faculty of Mechanical Engineering

University of Belgrade – Faculty of Mechanical Engineering is the first faculty to successfully complete the accreditation process in Serbia, so all study programmes have been accredited since April 12, 2008, by the Committee for Accreditation and Quality Verification of the Republic of Serbia.

The Faculty of Mechanical Engineering performs research and education in twenty one specialized research areas and railway mechanical engineering is one of them.

CIP Traffic Institute

A significant national institute, registered with the Ministry of Science and Technological Development, dealing with transport, CIP has significant research capacity and employs 296 researchers. Six of the researchers are with Doctoral Degree, 18 researchers are with Master Degree (Serbian: Magistar) and 272 are graduated engineers (five-year degree) of different specialities and profiles. The major orientation of the institute is making of projects for road and rail infrastructure like railway stations, highways, tunnels, bridges, buildings etc. Also, CIP is involved in research projects and studies for national transport system, cooperating with the Ministry for Infrastructure regarding modernisation of transport means and monitoring i.e. supervision of implementation of projects results.

Please provide some information about the National research data base (if any)

A database of researchers has been initiated by MSTD and Minister Djelic. Since this database is not yet developed and finished, it is not available for use, collaboration and for implementation into the TransNEW database.

The only existing National network of researchers is within Ministry of Science and Technological Development. It is in the development phase and is not publicly accessible for now.

Please provide a short overview of relevant National rail research projects

In the previous *Research programme in the field technological development for the 2008-2011 period*, there are presently 23 ongoing research projects in transport funded through the Ministry of Science and Technological Development (MSTD). Projects devoted to rail traffic (safety, energy efficiency, technological development and environmental considerations) are:

- Diagnosis, identification and monitoring of propagation of rail-track failures aiming to improve safety and harmonize the methodology with European standards (Institute „Kirilo Savić“)
- A project of technical development of the PE “Serbian Railways” in the market restructuring and opening conditions (University of Belgrade – Faculty of Transport and Traffic Engineering)
- Investigating the effects of rail modernization on the creation of modern integrated transport system of the Republic of Serbia and on the efficient environmental protection (University of Belgrade – Faculty of Transport and Traffic Engineering)
- Development of the fleet management system to reduce carbon-dioxide emissions (University of Belgrade – Faculty of Transport and Traffic Engineering)

Please provide a short overview of participation in cross-border and EU funded rail research projects

Present involvement of Serbia with FP6 & 7 projects is at low level and in some of the projects Serbian researchers were involved as individuals and not as institutions.

As a support action to the strategy announced by the Ministry for Infrastructure, realization of the General Master Plan for Transport in Serbia (GMTS) was financed from the EU funding programme CARDS. The overall objective of the General Master Plan for Transport in Serbia was to contribute to expanded, improved and safer road network, which will attract new investment to the poorer regions, improve the quality of life in the region, promote trade and contribute to improving relations with neighbouring countries.

Country - Slovakia

Fact sheet reflecting the situation of the organisation of railway research at national level

The purpose of this FOSTERRAIL Factsheet is to provide:

- Description of the organization of the railway research at a national level
 - from the governmental point of view for setting the political priorities and research strategies
 - from the stakeholder's point of view for performing the research
- Identification of strategic national railway research objectives and priorities, making available information on their developments and results. When available, information on multi-modal issues might be included

1	Table of contents
2	Executive Summary The Slovak railway network consists of national and regional lines. It is concerning lines with standard, narrow and broad gauge as well. Research in the railway sector is focus on the reconstruction, modernisation and maintenance.
3	Transport Research Policy and Research Initiatives
3a	Overview of the National transport policy with a focus on rail Legislation regulating the transport research in Slovakia – transport research in Slovakia is carried out and regulated by course of valid national legislation represented by the Act No. 172/2005 Coll. on the organisation of state support for research and development and on amendment of the Act No. 575/2001 Coll., adopted on 21 March 2005.
3b	Current state-of-the-Art in rail transport research The R&D strategy in the transport area was established by the document “R&D Conception of the Ministry of Transport, Post and Telecommunications of the Slovak Republic until 2005” adopted in the year 2000. The major goals and principles of this conception were transferred to the Transport Policy of the Slovak Republic until 2015.

3c	<p>National transport research funding sources</p> <p>The state budget provides financial support of science, technology and research in the transport area through individual budget chapters of the following organisations:</p> <ul style="list-style-type: none"> • Ministry of Education, Science, Research and Sport of the Slovak Republic (central authority for science and research) • Ministry of Transport, Construction and Regional Development of the Slovak Republic <p>The Operational Programme Transport</p> <p>Projects financed from the Cohesion Fund are focused in particular on modernization and construction of the superior transport network, which is a part of the TEN-T European transport network. The regional setting of projects is not only influenced by the needs of accessibility of the respective Slovak regions but also by the European transport policies. Therefore, these projects are of importance not only in terms of the Slovak economy, but also from the perspective of the Europe-wide transportation needs - motorway building and railways modernization. Projects of the OP Transport support regional development and help attract investments.</p>
4	<p>National rail research priorities</p> <p>The Strategy of the Development of Transport of the Slovak Republic until 2020 is a fundamental document elaborated by the Ministry of Transport, Construction and Regional Development of the Slovak Republic, which will materialise in other conceptual materials of the Ministry. Concerning the preparation of conceptual material at the EU level the “White paper on European transport policy for 2020“, serves as a background for the position of the Slovak Republic within the discussion about transport policy orientation.</p> <p>The Strategy includes the analysis of trends in the railway transport policy of the Slovak Republic and the EU, prognosis of its future development and challenges, which affect the achievement of specified goals in the field of transport. The Strategy defines the vision, objectives and measures in the area of transport development that will improve the competitiveness of the Slovak economy. It will also provide the social development of society and facilitate the elimination of regional disparities so that the economic potential of Slovakia by 2020 would get closer to the average level of EU countries in compliance with the requirements for sustainable development.</p>
5	<p>Overview of the rail research organisations and area of expertise</p> <p>University of Žilina</p> <p>The University of Žilina is the successor of the University of Transport established in Žilina in 1959 (separated as an independent Rail Faculty from the Czech Technical University in 1953 and moved to Žilina in 1959). During the 1990s, the former University of Transport extended its tutoring scope, however transport and telecommunication sciences still remains the core of its activities. Mainly the Faculty of Operation and Economics of Transport and Communications, Faculty of Electrical Engineering, Faculty of Civil Engineering and the Faculty of Management Science and Informatics cover the area of transport research.</p> <p>The other important universities dealing with transport research are TU Košice and Slovak University of Technology Bratislava.</p> <p>Railway Institute for Research and Development</p> <p>The Railway Institute for Research and Development is an internal organisational unit of</p>

	<p>Railways of the Slovak Republic (ŽSR). The main objective of the Institute is to conduct diagnostic, testing, certification, revision, defectoscopy and metrological activities in the area of ŽSR infrastructure. In accordance with the strategy of the development of railways, it is dealing with applied research and development and conducts special activities aimed at the development of technical and economic level of railways. The Railway Institute for Research and Development in its 50-year history underwent several reorganisations. The actual form of the Institute is valid as of 1st January 1997. Funds for research originate indirectly from the budget chapter of the Ministry of Transport, Construction and Regional Development of the Slovak Republic, in a form of subsidies through ŽSR.</p> <p>Transport Research Institute</p> <p>The foremost company conducting transport research in Slovakia is Vyskumny ustav dopravný, a.s. - VUD (Transport Research Institute, JSC). In its long history, the Institute has fulfilled important national economic assignments related to national transport policy making and implementation. Wide expertise integrates the VUD activities into the scientific and research basis of the Slovak Republic, which is one of the most important priorities of the VUD long-term strategy. The scientific and research activities of VUD covers all modes of transport, in particular, in the field of engineering and technology, operation, economy, legislation, management and organisation, informatics and automation, environment, logistics, power system, transport safety and quality, transport services and tourism management, transport policy, certification and testing in transport. Besides the core research activities, VUD is also the Notified body NO 1358, authorised to award certificates for building products in the area of transport recognised in the whole of Europe. For that purpose, the Institute operates three accredited test laboratories:</p> <ol style="list-style-type: none"> 1. A test laboratory for machine parts strength measurement; 2. A test laboratory of coating substances and road signs; and 3. A test laboratory of electric and technical - safety related parameters of components in transport. <p>In 2011, VUD formed a so-called "Centre for transport research" specialising in transport research in the area of tunnel safety, environmental protection, and testing and safety management in transport. The establishment of the Centre represents a unique interconnection of research activities and expert capacities of the business (VUD) and academic sector (University of Žilina) through an effective cooperation in area of transport research to achieve results of international level and importance.</p>
6	<p>National research data base (if any)</p> <p>In Slovakia has not been identified national database of railway research projects.</p>
7	<p>Overview of relevant national rail research projects</p> <p>Not identified.</p>
8	<p>Participation in cross-border and EU funded rail research projects</p> <p>INTRANSNET Project</p> <p>INTRANSNET - Network of European Medium and Large-scale Transport Research Facilities Operators was a project funded by the European Community under the 'Competitive and Sustainable Growth' Programme (1998-2002) of FP5 programme. Coordinator of the project is the University of Žilina, CETRA.</p> <p>B2B LOCO Project</p> <p>B2B LOCO (BALTIC - TO - BALKAN NETWORK FOR LOGISTICS COMPETENCE) is a 7th Framework Programme project, co-ordinated by the Institute of Logistics and Warehousing</p>

	<p>from Poznan, Poland.</p> <p>CENTRAL LOCO Project CENTRAL LOCO (Central European Network for Logistics Competence) was a 6th Framework Programme project, co-ordinated by the Institute of Logistics and Warehousing from Poznan, Poland. The project duration was 24 months (June 2005 - May 2007).</p> <p>U-STIR project U-STIR (User Driven Stimulation of Radical New Technological Steps in Surface Transport) is a 7th Framework Programme project, co-ordinated by University of Žilina, Slovakia.</p> <p>SELCAT project The SELCAT (Safer European Level Crossing Appraisal and Technology) is a 6th Framework Programme project coordinated by the Institute for Traffic Safety and Automation Engineering at the Technical University of Braunschweig (GERMANY)</p>

COUNTRY	SLOVENIA
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Please provide a short overview of the national transport policy especially the railway related issues

Slovenia has the [National Transport Policy Plan](#) May 2006 which was adopted by the National Assembly of the Republic of Slovenia. The document Resolution on Transport policy of the Republic of Slovenia was prepared by Slovenian Ministry of Transport.

General aspects of transport policy in Slovenia are creating integrated calculation transport models with the appropriate resources and intermodal connections and resources.

Slovenia's implementation of the transport policy provides a systematic evaluation of data and quality information systems to identify the state of roads and traffic safety. Slovenia will ensure the continuation of the existing trend of decline in incidents in rail transport as security nerve centres are exposed at railway level crossings with roads. To improve the situation in this area Slovenia should provide the necessary funding to fully implement the law on railway safety. To further improve the security situation in the maintenance of the necessary quality infrastructure and mobile assets, the technical specifications at the European Council Directive 2001/16/EC of 19 March 2001 on the interoperability of the trans-European conventional rail system will be taken into account. To achieve the indicative target there needs to be: the development and maintenance of tracks and vehicles, a reduction in the number of level crossings roads and railways, implementation and education of all those users involved in rail transport, improvement in the operation of inspection services, implementation of the regulations governing rail safety rail packages with regulations of the European Union.

The core programme priorities in the field of railways are:

- Reorganization of the rail system, making necessary amendments to Transportation Law;
- Adoption of the Resolution on National Development of Railway Infrastructure, which relates to certain physical and temporal priority infield maintenance, overhaul, upgrades and new construction of public railway infrastructure, in addition it also defines the investment value of individual projects. Prepare and adopt a national programme for a strategic planned development document, which will serve as a starting point for preparing annual plans, which are short term plans and implement modernization of existing infrastructure. Long term, the programme also includes major investments in the time period of 10 to 15 years, which seeks to update and upgrade the rail network to make it high quality and also provide appropriate

passenger services and freight transport.

Please provide a short overview of the Transport Research Policy and Research Initiatives

The main intention of “Transport Policy Plan in May 2006” was to set a path towards the optimum in the transport sector, with an important role given to research and innovation. “The state will encourage research and development projects in the transport sector – in the area of economy as well as in education – and thereby strengthen the scope and power of the transport sector and contribute to employment growth”.

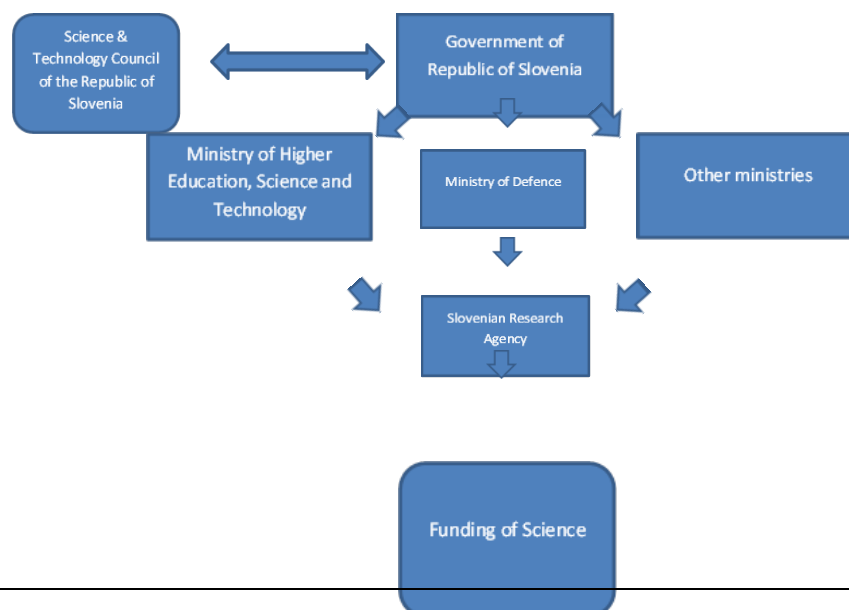
Transport research projects form part of the research programme to strengthen the economic infrastructure and promote sustainable development. The current national research framework programme »Slovenian Competitiveness 2006 - 2013«, comprises five main research themes. The national RTD (Research and Technical Development) framework programme 2006 - 2013 covers economic, social, political, and infrastructure topics. Transport research projects form part of the programme as transport infrastructure is seen as a means to strengthen the economic infrastructure.

Slovenia has a substantial research potential and some good results at home and internationally have already been achieved. The two research challenges are:

1. how to establish a strong and sustained link between transport and research policy; and
2. to support those priorities in the budget.

The principal body responsible for funding transport research in Slovenia is the Slovenian Research Agency in particular the Ministry of Transport and the Ministry of Higher Education, Science and Technology. The institutional funding are the obligations of the founder towards public research and infrastructural institutes. Through these, the Agency covers the fixed operating costs of the research or infrastructural activities of these institutions. Slovenian legislation documents in the field of research are: Rules on the Co-financing of Basic, Applied and Postdoctoral Research Projects, Rules on the Training and Financing of Young Researchers in Research Organisations and Rules on Financing and Co-financing the International Scientific Cooperation of the Republic of Slovenia.

Please provide some information about National transport research funding sources



Scheme 1: Structure of the research funding in Slovenia.

The Slovene Research Agency (SRA) as an independent public funding organisation that performs tasks related to the National Research and Development Programme and the creation of a European Research Area. Bodies of the Agency include a Management Board and Scientific Council. The Slovenian Research Agency has the status of public agencies and is responsible for awarding grants for national programmes and projects as well as promoting research and science in Slovenia. It also advises the Government in matters related to research, and is subordinate to the Slovene Ministry of Higher Education, Science and Technology.

SRA provides a framework for scientific research within the national budget and other sources, promotes high-quality scientific research, fosters internationally-comparable evaluation standards, provides transparency for the Slovene research community, promotes international research co-operation, analyses R&D activities and provides science policy expertise.

Please provide a short overview of the National rail research priorities

In Slovene research financial scheme there are no funds reserved only for transport researches, transport is included in the field Engineering.

Priority areas of research of the Scientific Council of the Agency, which are part of the focus of Slovene Ministry of Higher Education, Science and Technology, are:

- The first priority area: information and communication technology - ICT (including Computer and Information Science)
- The second priority area: advanced (new) synthetic metal and non-metallic materials and nanotechnology
- The third priority area: complex systems and innovative technologies (which includes technology management processes)
- The fourth priority area: technology for a sustainable economy (energy and environmental technologies, technologies for the rational use of energy, the use of new and renewable sources of energy, a safe and healthy environment, sustainable construction, to ensure quality control and the environment (land, forest, water , air), food, health products, etc.).
- The fifth priority area: Health and Life Sciences (interdisciplinary research in science, engineering and biotechnology, pharmaceutical and medical sciences that relate to the requirements of European directives in the field of quality of life).

Please provide a short overview of the main rail research organisations and area of expertise

Transport research organisations (SME's, Institutes and Universities) that are very active and relevant for transport research in Slovenia are: University of Ljubljana, Faculty of Maritime Studies and Transport; University of Maribor, Faculty of Mechanical Engineering; University of Ljubljana, Faculty of National Sciences and Engineering; Slovenian National Building and Civil Engineering Institute; Iskra systems PLC; DDC Consulting & Engineering; etc.

Described universities research activity mostly consists of transportation research and participation in transportation projects of national and European level.

● **University of Ljubljana, Faculty of Maritime Studies and Transport**

University of Ljubljana, Faculty of Maritime Studies and Transport research interest include areas that are associated with areas of transport systems, logistics, traffic safety, maritime

studies, transport infrastructure and traffic engineering.

● **University of Maribor, Faculty of civil engineering**

University of Maribor, Faculty of civil engineering areas of interest include areas that directly or indirectly affect and are associated with areas of transport systems, transport infrastructure, design and construction of all categories and types of roads and intersections, traffic engineering and cableways.

Please provide some information about the National research data base (if any)

Please provide a short overview of relevant National rail research projects

Transport research projects form part of the research programme to strengthen the economic infrastructure and promote sustainable development. The current national research framework programme is *Slovenian Competitiveness 2006 - 2013*, comprising five main research themes. The national RTD (Research and Technical Development) framework programme 2006 - 2013 covers economic, social, political, and infrastructure topics. Transport research projects form part of the programme as transport infrastructure is seen as a means to strengthen the economic infrastructure.

Main topics of transport research calls are:

- Study of factors affecting road safety in Slovenia;
- Intermodal transport links Adriatic-Sava;
- The development of models for traffic flow management;
- Development of research potential in transport and building space for the integration of research, economic and administrative spheres.

The Strategy for the Economic Development of Slovenia envisages a more even distribution of investment funding between roads and railways, however no shift towards a larger share of railway infrastructure investment has been implemented so far. Upgrading of the Slovenian railway network (construction of the second rail track on the Divača-Koper railway line, modernisation of the section Ljubljana-Hodoš, and construction of a second line on the section Maribor-Šentilj towards Graz) so as to allow for increased volumes of railway transport is needed.

Representative project

Implementation of the GSM-R system in Slovenian railway network

The study will be the basis for construction of a digital railway communications system (GSM-R) in Slovenia. The first phase will comprise the selection of an engineer to assist in the preparation of documents and plans necessary for the second phase of the project, during which the GSM-R system will be built (with co-financing from the Cohesion Fund). The European Commission allocated EUR 1,700,000 for the project. Date of completion of the project according to the European Decision is 31.05.2011.

Please provide a short overview of participation in cross-border and EU funded rail research projects

Slovenia was the coordinator in 32 projects, funded by FP6. Four of them were from the transport field. Three of them covered all surface transport modes (Road, Rail and

Waterborne) and one waterborne transport.

Slovenia is currently participating in 31 projects in the field of transport, funded by FP7.

European transport research projects are mostly carried out by universities and research institutes. The main aim of Slovenia as a country is to stimulate, encourage and facilitate the participation in Small to Medium Sized enterprises European research.

Representative projects

Efficient integration of cargo transport Modes and nodes and CADSES area (IMONODE) INTERREG III B CADSES - EU

Project leader: Assis. Prof. dr. Elen Twrdy

Duration: 01.01.2004 – 01.01.2005

The IMONODE project aims at studying the options and suggesting solutions and solid actions that will enhance the greater use of, and the accessibility to the transportation axes no V and X for freight transport with priority on rail. The emphasis is on rail because if no specific actions are taken it will continue to loose ground against road transport and this is contrary to the declared Transport policy of the EU. For the areas of CADSES countries that had a long tradition of rail supremacy over road, this is a crucial issue and a very urgent objective to pursue. Secondary aims concern the optimising and rationalising of the transport and handling systems for freight transport, reducing environmental impacts of road traffic, increasing the quality of cargo logistics services, reducing pollution, and saving energy along the two axes no V and X. The project proposals will be fully compatible with all relevant national and EU policies regarding structural funds policies, environment legislation, etc

Cross-border railway line Trieste / Divača: study and design of the Trieste – Divača – Ljubljana – Budapest - Ukrainian border

The project comprises the preparation of:

- a preliminary scheme, including preparation of a national spatial plan, investment documents and a preliminary plan;
- a final phase, including preparation of building permit documents and elaboration of geological, geo-mechanical, hydrological and hydro geological analyses;
- an implementation phase, comprising preparation of construction drawings.

The European Commission allocated EUR 28,700,000 for the project.

Date of completion of the project according to the European Decision is 31.12.2013.

Implementation of the GSM-R system in Slovenian railway network

The study will be the basis for construction of a digital railway communications system (GSM-R) in Slovenia. The first phase will comprise the selection of an engineer to assist in the preparation of documents and plans necessary for the second phase of the project, during which the GSM-R system will be built (with co-financing from the Cohesion Fund).

The European Commission allocated EUR 1,700,000 for the project.

Date of completion of the project according to the European Decision is 31.05.2011.

ERTMS Implementation on the Railway Corridor D (Valencia-Budapest)

The project consists of pilot projects concerning deployment of the Level 1 ETCS (European Train Control System) to enable interoperability of railway traffic on Corridor D in Slovenia. This is a joint project of four partner Member States along Corridor D stretching between Valencia, Lyon, Turin, Ljubljana and Budapest and on towards Ukraine. The project includes acquisition of traction units equipped with Level 1 ETCS for Slovenske Železnice. In Slovenia, Corridor D stretches for 381 km between the Italian and Hungarian borders, touching Sežana, Ljubljana, Zidani Most, Pragersko and Hodoš.

The project beneficiaries are the [Slovenian Agency for the Management of Public Railway Infrastructure Investment](#) (infrastructure) and [Slovenske Železnice](#) (rolling stock).
The European Commission allocated the Republic of Slovenia EUR 6,110,000 for the project.
Date of completion of the project according to the European Decision is 31.12.2010.

Working out of preliminary studies for the construction of the new line of high capacity/high speed line Divača-Ljubljana and Ljubljana-Zidani Most

The project concerns preparation of two documents:

- an Investment Project Identification Document concerning construction of a high speed/high capacity Divača – Ljubljana and Ljubljana – Zidani Most rail line, and
- a feasibility study proposing at least three alternative solutions for a high speed/high capacity Divača – Ljubljana and Ljubljana – Zidani Most rail line.

The project beneficiary is the [Slovenian Agency for the Management of Public Railway Infrastructure Investment](#).

The European Commission allocated EUR 750,000 per project.

Date of completion of the project according to the European Decision is 30.04.2011.

COUNTRY	SPAIN
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Please provide a short overview of the national transport policy especially the railway related issues

The Ministry of Public Works and Transport is responsible for preparing and implementing government policy on transport.

The framework for transport planning and research is initially provided by the Strategic Plan for Infrastructure and Transport for 2005–2020. Further, in line with ongoing European developments, sustainability is becoming increasingly important in transport policy in Spain. The Energy Saving and Efficiency Strategy Action Plan 2008–2012 focuses on seven sectors, including transport and specifies measures and targets for each sector.

Please provide a short overview of the Transport Research Policy and Research Initiatives

The scope of transport research in Spain is determined by the government strategy for research and innovation, and various policy documents that provide the framework for the transport system and policy development.

Legislation on Science, Technology and Innovation passed in May 2011 introduces considerable changes to the organisation of the research system. Currently, the research and development objectives and goals are set out in the National Plan for R&D and Innovation. Two types of strategic plans are foreseen in a multiannual framework:

- State Plan of Technical and Scientific Research
- Spanish Innovation Strategy.

Please provide some information about National transport research funding sources

Transport research is funded under the general research framework in Spain and through international and European funding opportunities.

At public level, two funding agencies are foreseen: the present Centre for Industrial Technological Development and a new State Research Agency. Currently, the Technological Industrial Development Centre channels funding and supports applications for national and international R&D and innovation projects made by Spanish companies. At the request of the scientific community, the State Research Agency will be created to run the science system with autonomy, efficiency, transparency and accountability of the research results. The new agency should also improve coordination between public and private agents and to establish stable, flexible and when needed, multiannual funding mechanisms.

Please provide a short overview of the National rail research priorities

Please provide a short overview of the main rail research organisations and area of expertise

www.ptferroviaria.es

Please provide some information about the National research data base (if any)

www.ptferroviaria.es

Please provide a short overview of relevant National rail research projects

www.ptferroviaria.es

Please provide a short overview of participation in cross-border and EU funded rail research projects

COUNTRY	SWITZERLAND
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Please provide a short overview of the national transport policy especially the railway related issues

Transport policy is conceived and developed by the Federal Department of the Environment, Transport, Energy and Communications. Various offices in the Department detail the policy including:

- Federal Office of Transport

- Federal Office for Spatial Development
- Federal Roads Authority Office
- Federal Office for Civil Aviation.

Authorities and specialised agencies also contribute to developing transport policy and are important in transport research. These are:

- Service for Public Transport Accident Investigation
- Railways Arbitration Commission.

The current National Transport Policy, entitled Making Mobility Sustainable and Fully Integrated focuses on providing modern and ecologically sound transport services. Another document related to transport policy and research in Switzerland is the Sustainable Development Strategy 2012–2015.

Please provide a short overview of the Transport Research Policy and Research Initiatives

Research in Switzerland is regulated by the Law on Research dated October 1983 and other regulations specific to an area of science in the country and its regions (Cantons). The national research policy for the coming four-year period is outlined in the education, research and technology message 2008–2011 (ERT Message), the main policy document for education, research and technology in Switzerland.

Please provide some information about National transport research funding sources

Transport research can be funded in several ways:

- through the general research framework;
- through dedicated transport research programmes;
- international funds;
- financing from the private sector.

The two main funding agencies are the Swiss National Science Foundation, which supports fundamental research, and the Swiss Innovation Promotion Agency, which promotes innovation. The National Science Foundation is a private foundation funded by the Confederation through the State Secretariat for Education and Research. The Innovation Promotion Agency is under the Federal Department of Economic Affairs. Research is funded through the National Research Programmes, where topics are selected through a bottom-up process. Interested groups can submit proposals for new research projects to the State Secretariat for Education and Research, and the Federal Council decides which topics and programmes to fund.

All projects funded by the Federal Administration are part of the national ARAMIS information system.

Switzerland is in the middle of Europe and has signed various cooperation agreements with the EU, and benefits from research funding under EU FP7 programme. In addition, private funds are made available for some urgent transport research such as Trans-Alpine crossing.

Please provide a short overview of the National rail research priorities

Please provide a short overview of the main rail research organisations and area of expertise

Please provide some information about the National research data base (if any)

Please provide a short overview of relevant National rail research projects

Please provide a short overview of participation in cross-border and EU funded rail research projects

3. Matrices indicating the National rail Policies and the national rail research priorities

3.1 National Rail Policy Priorities

Priority rank	National Policy Priorities	Country																									
		Albania	Austria	Bosnia	Bulgaria	Bulgaria	Croatia	Czech Republic	Estonia	France	Germany	Greece	Hungary	Italy	Latvia	Lithuania	Luxembourg	Montenegro	Norway	Poland	Portugal	Serbia	Slovakia	Slovenia	Spain	SWE	SWITZ
1	Environmentally-friendly rail system (noise, vibration, pollution) Sustainability																										
2	Intermodality	Austria	Bosnia	Bulgaria	Bulgaria	Croatia	Estonia	France	Germany	Hungary	Italy	Latvia	Luxembourg	Macedonia	Montenegro	Netherlands	Norway	Poland	Portugal	Serbia	Spain	Sweden	Switzerland • Liechtenstein	Turkey			
3	Safety & Security Innovations/Improvements	Austria	Bosnia	Bulgaria	Bulgaria	Croatia	Czech Republic	France	Germany	Greece	Italy	Latvia	Lithuania	Luxembourg	Macedonia	Montenegro	Netherlands	Norway	Poland	Portugal	Serbia	Spain	Turkey				
4	Modernisation/Infrastructur ent or old infrastructure and/or rolling stock	Albania	Bosnia	Bulgaria	Bulgaria	Estonia	France	Germany	Hungary	Italy	Latvia	Lithuania	Macedonia	Macedonia	Montenegro	Norway	Serbia	Slovakia	Spain	Sweden	Turkey	United Kingdom					
5	Maintenance Cost- efficiency and Energy efficiency	Austria	Bulgaria	Croatia	Croatia	Estonia	Germany	Hungary	Italy	Norway	Poland	Poland	Portugal	Serbia	Slovenia	Sweden	Turkey	United Kingdom									
6	Construction of new lines/Infrastructures Subregional connection projects	Albania	Bosnia	Bulgaria	Bulgaria	Croatia	France	Latvia	Lithuania	Luxembourg	Norway	Slovenia	Slovenia	Sweden	Switzerland • Liechtenstein	Turkey	United Kingdom										
7	Competitiveness of rail (for customers and/or industrials)	Czech Republic	Hungary	Italy	Latvia	Lithuania	Netherlands	Poland	Portugal	Slovakia	Spain	Spain	Switzerland • Liechtenstein	United Kingdom													
8	Fairness in access to rail (price or network)	Albania	Austria	France	Hungary	Latvia	Lithuania	Netherlands	Slovakia	Spain	Sweden	Switzerland • Liechtenstein	United Kingdom														
9	Rationalisation of transit/Improvement of Traffic management system	Albania	Bosnia	Croatia	France	Netherlands	Norway	Poland	Serbia	Spain	Switzerland • Liechtenstein	Turkey															
10	Managerial/Structural Financial/Legal restructuring or modification of the national railway sector	Albania	Bosnia	France	Italy	Macedonia	Netherlands	Portugal	Slovenia	Spain	Switzerland • Liechtenstein	Turkey															
11	Intelligent (ICT) systems ERTMS	Austria	Croatia	Czech Republic	Hungary	Italy	Portugal	Sweden	Switzerland • Liechtenstein	Turkey	United Kingdom																
12	Increasing capacity of trains	Austria	Croatia	Estonia	Latvia	Lithuania	Portugal	Sweden	Turkey	United Kingdom																	
13	Passenger focus	Albania	France	Luxembourg	Netherlands	Poland	Portugal	Switzerland • Liechtenstein	United Kingdom																		
14	Better service for Freight customers	Albania	Poland	Portugal	Switzerland • Liechtenstein	United Kingdom																					
15	Harmonisation with EU Rail technical law and specifications	Albania	Lithuania	Montenegro	Slovenia																						

3.2 National Rail Research Priorities

Priority	1	2	3	4	5	6	7	8	9	10	Priority	21	22	23	24	25	26	27	28	29	30
Tech	Green Technologies	Health, safety and security	Communication and information systems	Intermodality	Infrastructure support & maintenance	CCC reliability	ETCS/ERTMS	Time Management for train journey	Future energy source	Future Freight trains	Tech	Whole systems architectures and models	Culture, Behaviour and Collaborative	Customer Social and Emotional profiling	Accessibility	Closer running	Passenger environment and experience	Rail and switches and crossing	Rail structure and sub-structure	Track structures (bvihs)	Smart grid
Country	Austria	Albania	Austria	Austria	Austria	Bulgaria	Albania	Albania	Austria	Austria	Country	Serbia	Austria	Austria	Norway	Albania	Austria	Austria	Austria	Austria	Austria
	Czech Republic	Bulgaria	Bosnia	Bosnia	Bosnia	Croatia	Croatia	Netherlands	Norway	Czech Republic		Switzerland & Liechtenstein	Netherlands	Switzerland	Turkey	Netherlands	Turkey	Netherlands	Netherlands	Netherlands	Slovenia
	Netherlands	Czech Republic	Croatia	Netherlands	Croatia	Czech Republic	Netherlands	Norway	Serbia	Slovenia		Turkey	Switzerland & Liechtenstein	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom
	Norway	Netherlands	Czech Republic	Norway	Czech Republic	Netherlands	Switzerland & Liechtenstein	Sweden	Slovenia	Turkey		United Kingdom	United Kingdom								
	Poland	Norway	Netherlands	Poland	Norway	Switzerland & Liechtenstein	Turkey	Switzerland	Turkey	United Kingdom		31	32	33	34	35	36	37	38	39	40
	Serbia	Poland	Serbia	Switzerland & Liechtenstein	Switzerland & Liechtenstein	Turkey	United Kingdom	United Kingdom	United Kingdom			Guidance and learning	Decision making	Major Systems Interfaces	Whole System Asset Management	Freight customer database	Railway Customer database	Virtual ticketing	DAS	Rolling stock interfaces	Passenger stations
	Slovenia	Serbia	Switzerland & Liechtenstein	Turkey	Turkey	United Kingdom						Czech Republic	Austria	Switzerland & Liechtenstein	Serbia	Turkey	Austria	Turkey	Czech Republic	Norway	Turkey
	Switzerland & Liechtenstein	Slovakia	Turkey	United Kingdom	United Kingdom							Switzerland	Turkey	Turkey	Switzerland & Liechtenstein	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom
	Turkey	United Kingdom	United Kingdom									United Kingdom	United Kingdom	United Kingdom	United Kingdom						
	United Kingdom											41	42	43	44	45	46	47	48	49	50
Priority	11	12	13	14	15	16	17	18	19	20	Priority	Freight terminals	Climate resilience	Recruitment and retention	Railway systems thinking	Concepts of operation	Whole System Technology Vatch	ATO	Train Positioning	Level crossings	Innovation Support resources
Tech	Train energy and motion	Train operability and control	Rolling stock support and maintenance	Infrastructure information systems	Noise and Vibration reduction	Passenger end-to-end journey	Personalised Right Time Info	Passenger Train Architecture	Efficient Infrastructure management & maintenance	Plant and traction rolling stock	Country	Turkey	Norway	Poland	Switzerland	Switzerland & Liechtenstein	Switzerland & Liechtenstein	United Kingdom	United Kingdom	United Kingdom	United Kingdom
Country	Austria	Austria	Croatia	Austria	Albania	Austria	Austria	Austria	Austria	Austria		United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	Switzerland & Liechtenstein	United Kingdom	United Kingdom	United Kingdom
	Czech Republic	Czech Republic	Czech Republic	Croatia	Norway	Norway	Slovenia	Slovenia	Bosnia	Serbia		Switzerland & Liechtenstein	Switzerland & Liechtenstein	Switzerland & Liechtenstein	Switzerland & Liechtenstein	Switzerland & Liechtenstein	Switzerland & Liechtenstein	Switzerland & Liechtenstein	Switzerland & Liechtenstein	Switzerland & Liechtenstein	Switzerland & Liechtenstein
	Slovenia	Switzerland & Liechtenstein	Switzerland & Liechtenstein	Czech Republic	Poland	Turkey	Turkey	Turkey	Switzerland & Liechtenstein	United Kingdom		United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom
	Turkey	Turkey	Turkey	Switzerland & Liechtenstein	Serbia	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom		United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom
	United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom																