

## ERRAC and the ERRAC ROADMAP Project

### ERRAC's mission

Designing the roadmaps and research priorities to  
implement

the ERRAC Vision 2020 \*Towards a single European  
railway system\*

Securing the role of rail within the transport system



Dennis Schut

UIC – International Union of Railways

EU Research Manager & ERRAC Coordinator

**ERRAC**

**European Rail Research Advisory Council**



## ERRAC history

Set up in 2001 with the ambitious goal – embracing the Transport White Paper objectives – of creating a single European body able to contribute to the revitalisation and the competitiveness of the European rail sector through more innovation and more co-ordinated research activities.

■ ***a unique body bringing together:***

- ❑ Railway undertakings
- ❑ Infrastructure companies
- ❑ Urban and regional transport operators
- ❑ Manufacturing industry
- ❑ Representatives of the EU Member States
- ❑ European Commission
- ❑ Customer groups
- ❑ Consultants and academic institutions



***With the aim of achieving consensus on priorities for railway research and guiding research efforts towards common strategy – advising the European Commission***

**The  
European Rail Research Advisory Council  
consists of**

**ERRAC Plenary**

**All members – chairman Andrew McNaughton - NR**

**Vide chairs Dan Otterborn – Bombardier**

**Manuel Pereira – IST Lisbon**



**ERRAC Support Group**

**Limited number of members**

**Chair Dan Otterborn - Bombardier**

## ERRAC documents

- 2007 ERA Green Paper comment
- 2007 **Strategic Rail research Agenda 2020 – SRRA Update**
- 2006 Rail 21 Bruchure – Sustainable rail systems for a connected Europe
- 2006 Suburban and Regional Railway Landscapes in Europe
- 2005 A comparison of member states public research programs with the ERRAC SRRA 2020 - part 2
- 2004 Response to the EC consultation exercise on thematic domains for the 7th FP
- 2004 Rail research in the EU – part 1
- 2004 Light rail and metro systems in Europe
- 2002 Technical Annex to the SRRA
- 2002 Strategic research Agenda - SRRA
- 2001 **Joint Strategy for European Rail research 2020 – «Towards a single European railway system»**



## ERRAC and ERRAC-ROADMAP objectives and activities for the future

- ❑ Producing and approving detailed roadmaps for the correct implementation of the SRRRA and addressing technological and political (EU level) challenges
- ❑ Monitoring EU and global developments in rail technology
- ❑ Evaluation of the uptake of project results of past rail R&D projects mainly funded in the FP5 and FP6.
- ❑ Setting up a database of railway research projects and their results
- ❑ Link with other European Technological Platforms to develop multimodal approaches or learn from their solutions to similar questions
- ❑ Work with National Technological Platforms
- ❑ Maintaining ERRAC as the rail advisory body through the lifetime of the EC framework programs
- ❑ Monitoring programs and cooperate with relevant international organizations in- and outside Europe
- ❑ Encouraging and nurturing investment in rail research at a private and public level.



## ERRAC impacts

- ❑ **ERRAC R&D priorities feed into the European Commission Transport Framework Programs**
  - ❑ As example ERRAC presented to the DG Research on the 7th of May 2007 twelve R&D priorities for the FP7 2<sup>nd</sup> call: 4 out of 6 top priorities and 1 out of 6 lower priorities were translated in real topics in the call.
  - ❑ ERRAC presented to DG Research on 10th of February 2009 the R&D priorities for the FP7 3rd call – 6 out of the 11 priorities presented were retained
- ❑ **ERRAC studies with an impact on the market**
  - ❑ ERRAC developed « Suburban and Regional Railways Landscape in Europe »; « Light Rail and Metro Systems in Europe » and « A comparison of Member State public research programs with the ERRAC SRRRA 2020 ».
- ❑ **The Strategic Rail Research Agenda 2020 is the document influencing decisions at EU Institutions and Members States level**



# The ERRAC ROADMAP Project

Defining the steps towards

The rail system of 2020 and beyond



## The ERRAC Strategic Rail Research Agenda described 6 main priorities

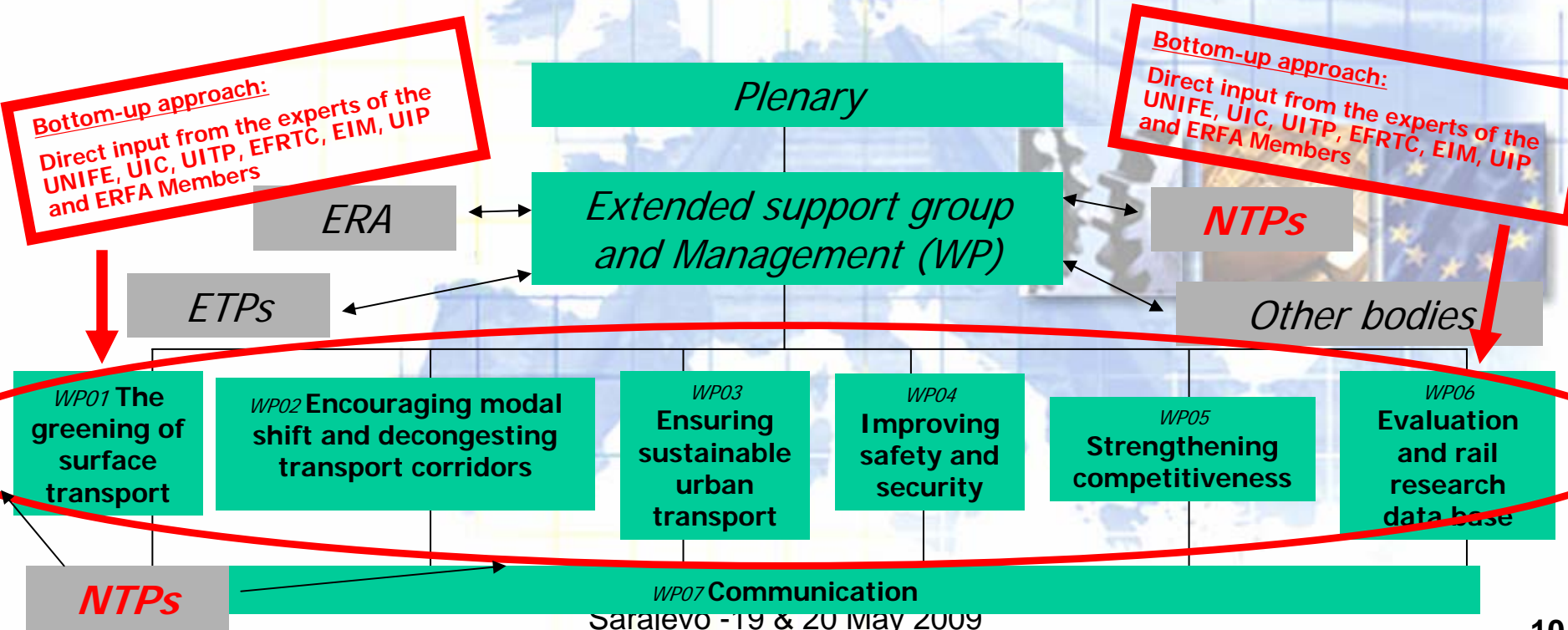
These are:

1. Energy and Environment
2. Personal Security
3. Test, Homologation and Safety
4. Competitiveness and enabling technologies
5. Strategy and Economics
6. Infrastructure



# The ERRAC- Roadmap project: the Work Packages for the roadmap building

To better respond to the FP 7 Work Programs, it was thought best to “translate” these 6 priorities into the 5 EC priorities for Transport Research (WP 1 to 5) + adding an *Evaluation and Rail Research Database WP06*, a *Communication and Dissemination WP07* and a *Management WP00*.



**Bottom-up approach:**  
Direct input from the experts of the UNIFE, UIC, UITP, EFRTC, EIM, UIP and ERFA Members

**Bottom-up approach:**  
Direct input from the experts of the UNIFE, UIC, UITP, EFRTC, EIM, UIP and ERFA Members

# ERRAC Future activities: bigger and higher involvement for a quality contribution

**(Unlike before, not only the associations UIC, UNIFE, CER and EIM, but also its most active members are partners in the project)**

## ERRAC Roadmap Work Package leadership

No.	WP	Leaders	Co-Leaders
00	Management	Bombardier - Dan Otteborn	IST Lisbon - Manuel Pereira
01	The greening of surface transport	<b>SNCF - Christophe Cheron</b>	KNORR-BREMSE - Manfred Walter
02	Encouraging modal shift (long distance) and decongesting transport corridors	<b>BANVERKET Bo Olsson</b>	EFRTC Imrich Korpanec
03	Ensuring sustainable urban transport (including modal shift, light rail vehicles and metro)	UITP - Yves Amsler	UNIFE - ANSALDO STS - Antonio Ruggeri
04	Improving safety and security	<b>RFI - Gino Di Mambro</b>	MER MEC - Antonella Semerano
05	Strengthening competitiveness	<b>Network Rail John Amoore</b>	CORUS RAIL David Farrington
06	Evaluation and rail research data base	<b>Trenitalia - Luisa Velardi</b>	Newrail - Mark Robinson
07	Dissemination and communication	WBC-INCO-NET - Transport - CER - Sarajevo -19 & 20 May 2009 Mark Schneider	UNIFE - Max Obenaus

# *Work Package 1*

## **the greening of surface transport**

**Leader: Christophe Cheron \* SNCF**  
**Co-leader: Manfred Walter \* Knorr-Bremse**

*Energy and Climate change*  
*Noise, vibrations (ltd. review noise TSI)*  
*Environmental friendly design and production*  
*Land use*  
*End life strategies*  
*etc*

# *Work Package 2*

**encouraging modal shift (*long distance*)  
and decongesting transport corridors**

**Leader: Bo Olsson \* Banverket**

**Co-leader: Imrich Korpanec \* EFRTC**

*Directly linked to the understanding of what makes railway  
transport attractive for the end user (include quality of  
services and interfaces between transport modes)*

*Capacity optimisation*

*Reducing the cost of building new lines*

*Freight transport*

WBC-INCO-NET - Transport -  
Sarajevo -19 & 20 May 2009

# *Work Package 3*

ensuring **sustainable urban transport** (*including modal shift, light rail vehicles and metro*):

**Leader: Yves Amsler \* UITP**

**Co-Leader: Antonio Ruggeri \* Ansaldo STS**

*Directly linked to the understanding of what make railway transport attractive for the end user (include quality of services and interfaces between transport modes)*

*Cost effectiveness*

*Integration between transport modes (ERTRAC cooperation)*

*New concepts for rolling stock*

# *Work Package 4*

improving **safety and security**

**Leader: Gino DiMambro \* Italcertifer**

**Co-leader: Antonella Semerano \* Mer Mec**

*Cross acceptance and homologation (safety)*

*Survey systems, threat analysis, risk assessment and prevention, effective emergency and crisis management (security)*

*Perception of security by end user*

*Collaboration with ERA foreseen*

# *Work Package 5*

## **strengthening competitiveness**

**Leader: John Amoore \* Network Rail**  
**Co-leader: Dave Farrington \* Corus Rail**

*Costs effectiveness*  
*LCC*

*Removing barriers to interoperability*  
*Competitive Enabling Technologies*  
*etc*



# *Work Package 6*

## **Evaluation and rail research innovation data base**

**Leader: Luisa Velardi \* Trenitalia**

**Co-leader: Mark Robinson \* UNEW/Newrail**

*continuation of the ERRAC Evaluation Working Group  
bringing all relevant rail research projects and deliverables together in a  
common UIC based database*

*Basis for the ERRAC ROADMAP's evaluation of finished projects  
Analysis of success/failure factors and communication of these facts to the  
different WP's and all stakeholders in general*

*Advisory role for FP7 project ideas in terms of implementation of project results*

# *Work Package 7*

## **Dissemination & Communication**

**Leader: Frank Schneider \* CER**

**Co-leader: Max Obenaus \* UNIFE**

*To ensure the overall dissemination and communication activities, supporting the ROADMAP project and the Work Package teams.*

*To ensure a high level of visibility of ERRAC ROADMAP activities and a clear understanding of its aspirations of the contents of the SRRR and its implementation “down to the grassroots level”....*

*To support the actions towards disseminating the values and advantages of an environmentally friendly, safe and secure, reliable and efficient “value for money” European rail transport system.*

# *Coordination & Management*

## *WPO*

**Administr.: UIC + UNIFE \* Techn.: Bombardier + IST Lisbon**

to coordinate the overall work of the ERRAC roadmap project and together with the ERRAC-ROADMAP CSA Steering Committee to manage the interactions between the WP 1-7 so that no overlap or gaps exist between the different roadmaps, to help solving potential conflicts and to stimulate on time deliveries. WPO will also assist in identification of needed specialists and in making these specialists available.

WPO coordination will also be responsible for the overall external contacts with the Commission concerning the activities of this CSA, and will support the ERRAC Support Group in contacting other technology platforms, National technology platforms ERA-NET etc. whose contribution could enhance the deliveries of the ERRAC-ROADMAP CSA.

WPO will prepare the Extended Support group agenda and will assist the Extended Support group chairman and give all the necessary support for the ERRAC Plenary meetings dealing with the results of this CSA

# Link between ERRAC and ERRAC ROADMAP

## ERRAC Plenary

All members – chairman Andrew McNaughton - NR

Vide chairs Dan Otterborn – Bombardier

Manuel Pereira – IST Lisbon

## ERRAC Support Group

Limited number of members

Chair Dan Otterborn – Bombardier



## ERRAC Extended Support Group

Limited number of members

Chair Dan Otterborn – Bombardier

+ all ROADMAP (co-)leaders



## ERRAC ROADMAP Steering Committee

Chair Dan Otterborn, vice chair Manuel Pereira

+ all ROADMAP (co-)leaders

WP WP WP WP WP WP WP

## the European Commissions FP7 – 3<sup>rd</sup> Call for proposals

**Rail related research topics in Theme  
Transport**



(open **probably** end June 2009 – end December 2009)

## ERRAC ROADMAP 3rd Call input

**Limitation: The EC asked ERRAC only for priorities within focus: « moving more freight faster »**

**WP01 - TOPIC 1 - Attenuation of ground-borne vibration and affecting residents near railway lines**

**WP01 - TOPIC 2 - More sustainable products for the railway infrastructure**

**WP02 & WP05 - TOPIC 1 - Increased capability of rail freight of today**

**WP02 & WP05 - TOPIC 2 - Step changes in rail freight logistics: new technologies and methods to increase freight competitiveness in the emerging low density, high value market**

**WP02 & WP05 - TOPIC 3 - Improving the railway system capacity for freight: Efficient utilisation of the optimised rail network**

**WP02 & WP05 - TOPIC 4 - Sustainable Railway: Designing the Freight Vehicle – Track System for Higher Delivered Tonnage with Improved Availability at Reduced Cost**

**WP02 & WP05 - TOPIC 5 - Towards Automated Maintenance: Delivery of supporting technologies, demonstrators and standards leading towards automated railway infrastructure maintenance**

**WP03 - TOPIC 1 - Energy consumption reduction in Urban Rail Systems**

**WP03 - TOPIC 2 - Tram-train market analysis and technical harmonization**

**WP03 – TOPIC 3 - Urban logistics and rail public transport**

**WP04 - TOPIC 1 - Improvement of fatigue calculation methods of railway axles**



## Comparison of the ERRAC priorities and the EC WP2010 draft (so called non-paper).

6 topics in this draft are the ERRAC priorities or can be considered as the Commission interpretation of the ERRAC priorities, being:

- SST.2010.1.1.1. Carbon footprint of freight transport
- SST.2010.1.1.2. Attenuation of ground-borne vibration affecting residents near railway lines (COPY & PASTE)
- SST.2010.2.1.1. Fast implementation of innovative/effective rail technologies to improve rail freight services
- SST.2010.4.1.1. Minimizing the risk of fatigue failure of railway axles (COPY & PASTE)
- SST.2010.5.2.1. Automated and cost effective railway infrastructure maintenance (COPY & PASTE)
- SST.2010.5.2.2. The sustainable freight railway: Designing the freight vehicle – track system for higher delivered tonnage with improved availability at reduced cost. (COPY & PASTE)
- SST.2010.5.2.3. Step changes in rail freight logistics: new technologies and methods to increase freight competitiveness in the emerging low density, high value market. (COPY & PASTE)
- Other topic: SST.2010.2.1.2. Efficient interfaces between transport modes

**Expressions of interest invited!**

## Further information:

### *Useful links:*

***European Framework Program – EU research funding***

**<http://cordis.europa.eu/en/home.html>**

### *Find a FP7 Call:*

**<http://cordis.europa.eu/fp7/dc/index.cfm>**

**ERRAC**

**[www.errac.org](http://www.errac.org)**

***Register of experts/ evaluators***

**<https://cordis.europa.eu/emmp7/>**

Dennis Schut: **[schut@uic.org](mailto:schut@uic.org)**