Implementing the European Strategic Rail Research Agenda – SRRA:
The EU project ERRAC ROADMAP explained

IRRB International rail Research Information Days
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The ERRAC - European Rail Research Advisory Council - Roadmap project explained: from Vision to Reality
Europe of 21st century depends on the availability of an efficient transport sector

- **Real change in the Common Transport Policy:**
  - the 2001 and now the 2011 set Transport White Paper the ambitious objectives for it, placing the rail sector as the key sustainable transport to solve the congestion, emission and safety issue, in particular with: **A 50% shift of medium distance intercity passenger and freight journeys from road to rail and waterborne transport.**

- **In the future, an enlarged European Union (up to 28 Members and a total population of 560 millions inhabitants):**
  - Move passengers and freight by train is the true sustainable measure to **solve congestion, pollution and global warming problems**
  - Mobility in urban areas is also critical: transport equipment (infrastructure and rolling stock) are **decisive for a balanced economic and social development of urban and metropolitan areas.**
The European transport landscape and the importance of rail R&D investments

Investments on innovation:

- European Rail Supply industries: more than €1000 million p.a. in competitive R&D
- Railway operators and infrastructure managers: about €250 million p.a. in R&D
- EU-funded R&D projects under FP6 and FP7: about €25 million p.a. granted to joint railway research.
Set up in 2001 with the ambitious goals of:

- embracing the Transport White Paper objectives
- creating a single European body able to contribute to
  - and 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
- Customer groups
- Academics institutions
- European Commission

With the aim of achieving consensus on priorities for railway research and guiding research efforts towards common strategy.
ERRAC objectives and activities

**Enhancing collaborative European rail research by:**

- Building consensus among stakeholders.
- Improving synergies between EU, national and private rail research (identify priorities).
- Strengthening and re-organizing research and development efforts.
- Effective pooling of human and material resources.
- Launching ambitious co-operative research plans.

**ERRAC past results:**

- Ensured widespread consensus of the Strategic Rail Research Agenda 2020 and updating the ERRAC Rail Business Scenario.
- Assessing how current R&D programmes align with the SRRA 2020.
- Reviewing the light rail and metro system market sector in the 25 EU Member States and the suburban and regional landscape in Europe.
- Proposing input for the EU’s 6th and 7th RTD Framework Programme.
ERRAC today

ERRAC is ruled by a share of Chairmanship between Supply Industries, Railways operators and academia.

Today it is chaired by Mr. Andrew McNaughton, Network Rail, supported by two Vice-Chairmen, Mr. Dan Otteborn – Bombardier Transportation – and Mr. Manuel Pereira – Technical University of Lisbon.

ERRAC is a well established and recognized ETP that has achieved to build consensus between the sector stakeholders

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European Technology Platforms (ETPs) are industry-led stakeholder fora charged with defining research priorities in a broad range of technological areas.

(Definition European Commission)

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Research for innovation – no innovation without implementation

Implementation: market uptake of innovative applications to reach the SRRA 2020 objectives is the next step that will be built up of the results of the project ERRAC-Roadmap!
ERRAC-Roadmap will contribute to translate, monitor and disseminate to the whole European industry the strategic recommendations and guidelines of the SRRA 2020.

**ACHIEVEMENTS:**
- Awareness and cooperation at strategic EU level
- Real consensus building and FP topic sector priorities definition
- Pre-competitive R&D multi-annual planning with sector needs investigation and possible influence on political theme of annual calls – input into FP7/8
Main priorities in the updated SRRA:

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

In order to better respond to the FP 7 Work Programs, it was thought best to “translate” these 6 SRRA priorities into the 5 FP priorities for Transport Research (using a cross reference matrix) + adding an Evaluation and Rail Research Database and a Management WP.
ERRAC- Roadmap:

wider and direct involvement from sector Companies and association representatives!

ERRAC Roadmap Work Package leaders and co-leaders are:

- **WP01** The greening of surface transport
  (Leader: C. Cheron SNCF / Co-leader: M. Walter KNORR BREMSE)

- **WP02** Encouraging modal shift (long distance) and decongesting transport corridors
  (Leader: B. Olsson TRAFIKVERKET / Co-leader: C. Irwin Passenger association)

- **WP03** Ensuring sustainable urban transport (including modal shift, light rail vehicles and metro)
  (Leader: Y. Amsler UITP / Co-leader: A. Ruggieri ANSALDO STS)

- **WP04** Improving safety and security
  (Leader: F. Favo RFI / Co-leader: A. Semerano MER MEC group)

- **WP05** Strengthening competitiveness
  (Leader: J. Amoore NETWORK RAIL / Co-leader: D. Farrington CORUS RAIL)

- **WP06** Market uptake Evaluation and database
  (Leader: L. Velardi TRENITALIA / Co-leader: M. Robinson NEWRAIL)

- **WP07** Communication (Leader: E. Boeckle CER / M. Obenaus UNIFE)

- **WP0** Management (D. Schut UIC / G. Travaini UNIFE) & Technical Leadership (D. Otteborn BOMBARDIER / M. Pereira IST +EURNEX)
Producing and approving detailed roadmaps for the correct implementation of the SRRA and addressing technological and political (EU level) challenges

- The first year annual draft roadmap has been published in November 2010
- The second annual draft roadmap will be published in July 2011!

 Updating the Rail Strategy - Vision 2020 - and the SRRA towards 2050

 Market uptake evaluation of past rail R&D projects mainly funded in the FP5, FP6 & FP7.

 Link with other European Technological Platforms (already strong with ERTRAC & ACARE)

 Work with National Technological Platforms (MOU with the Czech National Rail TP 2010)

 Maintaining ERRAC as the rail advisory body through the lifetime of the EC framework programs

 Monitoring programs and cooperate with relevant international organizations outside Europe

 Encouraging and nurturing investment in rail research at a private and public level.
ERRAC FP R&D funded projects: Impact evaluation

- Started in 2006 with the aim of understanding how to improve the work done and money invested in FP projects by the industries and the European contributor;

- Not judging any project per se, every project that was financed and delivered results is good. But the aim is to look at if and how results have been implemented: we call this approach a market uptake or implementation

- Learning from the past and trying do to better in the future with Lessons Learnt and Reasons for Outcome

- The ERRAC Evaluation instrument can be used by consortia drafting a proposal or implementing their project

- No innovation without implementation
### ERRAC impacts

- **ERRAC R&D priorities feed the European Commission Transport Framework Programmes**
  - In the FP7 the effective collaboration with the Commission is highly accepted and welcomed by all rail stakeholders!

- **ERRAC studies with an impact on the market**
  - « Suburban and Regional Railways Landscape in Europe »; « Light Rail and Metro Systems in Europe »
  - « A comparison of Member State public research programs with the ERRAC SRRA 2020 ».

- **The Strategic Rail Research Agenda 2020 and the Roadmaps are the base reference document for current EU R&D:** the second year draft roadmaps will be published in July 2011
WP0X Draft Roadmap

Leader:

Co-Leader:
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1. CONCEPT & VISION

The “ideal” situation – Concept or Vision of the envisaged future role of Rail Transport within the European Transportation Network

- Customer oriented
- Cost driven progress
- Technology driven progress
- Society expectations
- etc
2. PRESENT SITUATION

(where are we now)

- General indicators (EMU, NAFTA, supranational bodies,…)
- Policy drives and constraints
- Financial perspectives
- Legislative framework (EU, National, Regional,…)
- Directives, Rail Directives, TSI, standards
- Rail Production models & factors
- Targets
- Indicators
3. STATE-OF-ART, RECENT PROJECTS, ONGOING RESEARCH

• Critical technologies available: from blue sky research, new concepts, tools, new models, proof and validation, prototypes, industrial implementation, end users.

• The development of critical technologies to extend and improve the technology base for well identified critical needs

• Integration and validation of complex systems and technologies in advanced industrial and operational environments with the aim to reduce risks in the application of innovative and complex developments.

• Where appropriate, cross-sectorial research activities for critical technologies common to other transport modes and other industrial sectors opportunities will be exploited.

• Expected results, impact of results, market uptake perspectives.

• Pre competitive or competitive research
4. ROADMAP DEVELOPMENT
(how do we reach our vision – which steps are needed and when)

- Identify (heading) of product, system (soft and hard), operational issues
- Identify critical system requirements and targets
- Specify major technology areas and drivers (technology can drive solutions or vice-verse, needs may drive technologies)
- Technology roadmap and timeline with stream of projects (targets) including nature of projects:
  - Identify major actors, knowledge and skills
  - Business model, market uptake
  - Interdependencies with other wp and other sub-themes.
In my presentation I have explained:

• How all European Rail stakeholders, from supply industry to operators, rail research institutes to infra-structure managers and from users groups to Member State representatives are gathered in:

  • designing and planning the European Railway system of the future
    • as well as
  • designing the steps and research needs to get there

• You can find the part-Roadmaps 2011 on

  • www.errac.org
ERRAC wants your contribution as rail stakeholder!!!

Do not hesitate to contact us

For all information, Roadmaps and other documents

www.errac.org

and/or

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Thank you for your attention!