ERRAC

European Rail Research Advisory Council

ERRAC ROADMAP FACT SHEET

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Improving Safety and Security

- WP04 -

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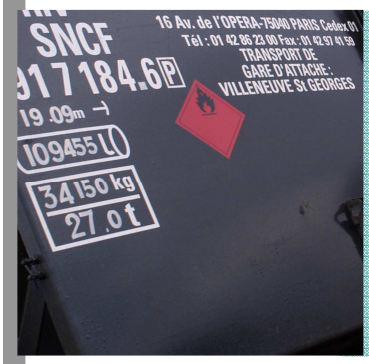
The final scope of the present work package is to enhance awareness and perform actions along certain key issues which have been regarded as strategic to improve safety and security in the railway sector.

The roadmapping work of this WP takes into account the protection of vulnerable persons, such as train drivers, passengers, train-crew, track workers, shunting personnel, and pedestrians Advanced engineering systems and risk analysis methodologies for the design and operation of vehicles and infrastructure will also be considered of specific importance. There will also be integrated approaches linking human elements, structural integrity, preventive, passive and active safety including monitoring systems, rescue and crisis management. Safety will be considered as an inherent component of the rail transport system relating to infrastructure, freight (goods and containers), transport users and operators, rolling stock as well as measures at policy and legislative levels, including decision support and validation tools; security will be addressed wherever it is an inherent requirement to the transport system. An additional point of attention will be the protection of vulnerable locations on the network, as well as signalling equipment, critical junctions, bridges etc.



Objectives of ERRAC WP04: second year Roadmap

- Issuing the "**Security Roadmap**"
- Updating the existing "**Safety Roadmap**"

Security Roadmap Pillars

- **Human factors**, covering both staff recruitment and training and the involvement of passengers in their own security. Nothing of lasting value will be achieved without their involvement, whether concerning prevention, alarms, interventions, crisis management, tackling a disorder, etc.;
- **Technologies,** the development of which must support staff efficiency, whether this be new video-surveillance or image recognition technology, or automatic detection of abnormal situations and suspicious or dangerous objects (explosives or others);
- **Procedures and regulations** ensuring a coherent whole.

Safety Roadmap Pillars

- **Cost Impacts.** Two families of R&D action targets seem equally urgent to cover in this respect:
  - The Infrastructure Managers and the Railway Undertakings should guarantee integrated initiatives to mitigate the risk of accidents stemming from internal responsibility (ERTMS) systems, assistant facilities to train drivers and /or planner, integrated inspecting gates, more safe designs against accidental events, etc.);
  - Society should have a role to encourage the avoidance of risk from unexpected situations, which once they happen have a tremendous cost incidence on the society (e.g. level crossings, vandalism etc.)

- **Innovation & Interoperability.** Safety innovation has to be interoperable;
  - Also, when it is necessary to introduce new safety requirements, these requirements should not be defined in terms of required use of a given product, but in terms of requirement of new functions and performance. Therefore, it is important to put in place an open and non-discriminatory process allowing, cost-efficient transfer of industry innovations from railway industries.
  - Paying due attention to this paradigm is the only condition for promoting the establishment of efficient TSIs on new functions or safety performances.

- **Climate & Environmental Impact.** For all European Countries, the rail network represents a key critical infrastructure, deserving protection in view of:
  - its continuous structure spread over the whole territory:
  - the high number of European citizens using it for personal and professional reasons:
  - the large volume of freight moving through it:
  - the environmental and climate changes inferring unexpected geo-technical failures that impact the safety and efficiency of rail operations

Safety & Security Roadmap supported research priorities

- increase the policy scope of axle safety inspection and maintenance;
- promote measures for preventing derailment occurrences,
- enable new actions for suicide mitigation in the railway surroundings,
- promote more integrated maintenance policies across the railway system and prevent disruption coming from natural and environmental events

Disclaimer

ERRAC-ROADMAP

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ERRAC Roadmaps Fact Sheets

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