



Priority 2 : Infrastructure for long distance transport

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Strategic Targets

**Focus Themes
(Europe 2020 strategy)**

	Urban Mobility (1/6)		Long Distance Transport (2/6)	
Greening (3/6)				
Smart and Resilient (4/6)				
Inclusive society (5/6)				
Health and Safety (6/6)				

Reliable infrastructure networks for long distance transport in Europe are fundamental for the economic growth, competitiveness and territorial cohesion.

Trends:

- Increase in the volumes of passengers and goods.
- Increase of the need of reliable infrastructure systems for transport of electricity, water and gas.
- Increase in the level of service.
- Building inter-European transport system connected to non-EU countries.
- Special attention for safe and secure use of robust infrastructure.
- Focus on reduction of emissions and sparse use of materials.
- Focus on cost-effective design, construction and maintenance.
- Use of intelligent ICT and ITS systems.

1. Achieve full mobility and accessibility by an integrated seamless multimodal system of infrastructure, hubs and terminals.
2. Modern transport systems: existing infrastructure as smart as new ones
 - Improved and identical level of service of infrastructure (aging and new) and networked systems in function of future foreseeable needs;
 - Increased capacity and efficiency;
 - Smooth impact on operation, transport and environment of construction, upgrading and maintenance (techniques, monitoring strategies, materials, decision taking);
 - Deployment of ICT (and ITS) for and between vehicles, infrastructure, operators, logistics and transport services.
3. Smart and advanced integrated networks management and operation at all levels (incl. decision making).
4. Sustainable development by intelligent use of available economic and environmental resources.

Main results-deliverables

- Economical growth.
- Increased competitiveness toward non-EU countries.
- Application of new solutions, techniques, processes.
- Increased level of service and operation.
- Constant control of the infrastructure and networked systems.
- XX% money saving through life time extension of existing infrastructure and optimal maintenance strategies.
- XX% less environmental effects.
- XX% saving of time through improved long distance transport between the European economical centres.

Connections with platforms

Errac, ERTRAC, Waterborne

1. **Reliable networks** with predictable service levels: systematic approach to construction, maintenance, operation and management.
2. Design and construction of **infrastructural nodes** and new multimodal infrastructures to form a high speed pan-European transport network with a quick exchange of transportation means.
3. **Adaptability** of infrastructure for **future changing** requirements and challenges: inventory of trends and developments in traffic flows, loads, environmental challenges and risks.
4. Objective framework with technical requirements and quality indices as a basis for the specifications, and the ability to **adjudge the societal costs** and benefits of infrastructure.
5. Concepts and models for an efficient combination of **sustainability** and durability.
6. Validation of **improved assessment**:
 - Advanced models for better understanding of safety modeling, structural performance, load impact, damage and deterioration

7. Adopting new technologies, techniques and materials that **safely extend** the lifecycle and increase capacity and durability and low environmental impact, reduced maintenance and operation costs and increased comfort for users:
 - New **reinforcing techniques**, adoption of new materials or traditional materials with enhanced performances;
 - Use of industrialized construction (**prefab**); development of **fast and long lasting** techniques addressing maintenance or upgrading during operation of pipelines, roads, railways and waterways.
8. Implementation of **monitoring systems**, e.g. for establishing the 'structural health'.
9. Models and tools for a **cost-optimal management of maintenance** with low impact on service and environmental aspects.
- 10. Robust infrastructure**: both the individual assets (e.g. tunnels) as the entire network should be robust so that individual rarely occurring failures do not lead to failure of the complete system.

11. Development of **road pavement construction**, management and maintenance including life-cycle, advance techniques for materials optimization and reuse.
12. Development of **railway tracks construction**, management and maintenance including life-cycle consideration.
13. Development of **ICT** and ITS systems to **optimize traffic, serviceability and security of networks**, integrating traffic and transport monitoring and management, information to users, tolling, incident and crisis management.
14. Reducing impact of accidents by locating and **monitoring transport** and providing efficient and fast appropriate emergency measures.
15. Application of **Global Navigation Satellite Systems** for assisting infrastructure managers (natural or man-made disasters; real time traffic tracking, reporting and planning to avoid congestion; enhanced controls, localization and safety of goods and passenger in all the transport modes within a multi-modal transport framework).



Infrastructure:

**Robust, safe, low carbon, innovative, long lasting,
comfortable and cost effective**

existing/new

of vital importance for European economy.