

PRESS RELEASE

(3rd January 2013) MAINLINE is a European railway project funded under the 7th Framework Programme¹. It is a three-year project that started in October 2011. The funding is approximately €3,000,000 (Total Budget €4,500,000). MAINLINE is co-ordinated by UIC with support from ARTTIC in France.

The objective of the project is to develop methods and tools contributing to an improved railway system by taking into consideration the whole life of specific infrastructure – tunnels, bridges, track, switches, earthworks and retaining walls.

MAINLINE will:

- facilitate the utilisation of improved assessment and life extension without increasing risk,
- improve existing knowledge on damage and deterioration mechanisms in order to reduce significantly their effect on asset performance,
- identify and implement new cost effective replacement/renewal construction methods and logistics
- identify and compare new surveying and monitoring technologies
- develop methods to determine the whole life environmental and economic impact.

The project has now been running for one year. Important developments have already been carried out and major activities will take place in the coming months. Eight important deliverables are about to be submitted, some of which will soon be available for the public:

- In Work Package 1 (WP1) “Life extension – Application of new technologies to elderly infrastructures”: the first deliverable D1.1 “Benchmark of new technologies to extend life of elderly rail infrastructure”
- In WP2 “Degradation and structural models to develop realistic life cycle costs and safety models”: D2.2 “Degradation and intervention modelling techniques” – the first deliverable “D2.1 Degradation and performance specification for selected assets” has already been delivered.
- In WP3 “Replacement of obsolete infrastructure – New construction methods and logistics”: the first deliverable D3.1 “Benchmark production and replacement of railway infrastructure”
- In WP4 “Monitoring and examination techniques”: the first deliverable D4.1 “Report on assessment of current monitoring and examination practices in relation to degradation”
- In WP5 “Whole life environmental and economic asset management” – the core WP in MAINLINE:
 - ❖ D5.1 “Assessment of asset management tools”
 - ❖ D5.2 “Assessment of environmental performance tools and methods”

¹ The research leading to these results has received funding from the European Union's Seventh Framework Programme [FP7/2007-2013] under grant agreement n° 285121

❖ D5.3 “Recommendation for LCAT format”

As an example of the work being carried out, regarding life extension and application of new technologies to elderly infrastructure, two bridges are presently under analysis in Sweden, in a study led by the University of Luleå. The tests being conducted include:

- Prestressing of a concrete trough bridge to increase its shear capacity
- Test to failure of a steel truss bridge to test its capacity (nuts, fatigue)

The results of the project will enable a more effective planning of maintenance by the railway Infrastructure Managers (IMs). IMs will have access to new and improved renewal/strengthening/refurbishment solutions. MAINLINE will provide them also with an evaluation tool capable of accurately comparing cost-efficiency on a whole life basis, taking into account traffic situation, environmental criteria and economic criteria. In addition, the project will quantify the needs arising from emerging freight and passenger demands.

MAINLINE builds upon knowledge from recently completed European research projects, such as:

- INNOTRACK, which dealt with maintenance and renewal of track components
- Sustainable Bridges, which dealt with bridge assets

Besides, MAINLINE will benefit from partners' expertise in other infrastructure networks, such as energy, and relevant industry sectors.

Project benefits will come from keeping existing infrastructure safely in service through the application of technologies and interventions based on better life cycle cost (LCC) considerations.

The MAINLINE consortium comprises 19 partners from 11 different countries who bring together a mix of expertise and various organisations:

- Infrastructure Managers: the International Union of Railways (UIC), France; Network Rail Infrastructure Limited, United Kingdom; Deutsche Bahn, Germany; MÁV Magyar Államvasutak, Hungary; TCDD, Turkey; TRAFIKVERKET, Sweden
- Industry partners: COWI, Denmark; TWI, United Kingdom; COMSA, Spain; SKANSKA, Czech Republic; Sinclair Knight Merz (SKM), United Kingdom
- Universities: University of Surrey, United Kingdom; University of Minho, Portugal; University of Luleå, Sweden; Polytechnic University of Catalonia, Spain; Graz University of Technology, Austria
- SMEs: ARTTIC, France; DAMILL, Sweden
- A governmental organisation: SETRA, France.

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