PROJECT

CREAM

Customer-driven Rail-freight services on a European mega-corridor based on Advanced business and operating Models

Funding: European (6th RTD Framework Programme)
Duration: Jan 2007 - Dec 2011
Status: Complete with results
Total project cost: €24,912,161
EU contribution: €12,213,202

Call for proposal: FP6-2005-TREN-4
CORDIS RCN : 85694

Background & policy context:
The CREAM project was set up to respond to the increasing demand for rail-based logistic systems and to support the implementation of change in the European railway area, initiated by European legislation. CREAM defined advanced customer-driven business models for railway undertakings and intermodal operators against the benchmarking business models of logistic service providers. CREAM analysed the operational and logistic prerequisites for developing, setting up and demonstrating seamless rail freight and intermodal rail/road and rail/short sea/road services on a Trans-European mega-corridor between the Benelux countries and Turkey/Greece. On this basis the CREAM partners developed different business cases which were successively integrated into an innovative corridor-related freight service concept.

Objectives:
The CREAM project aimed at developing an innovative corridor-related freight service concept that includes the following components:

- Innovative rail-based supply chains including intelligent rail and multimodal operation models.
- A quality management system.
- Interoperability and improved border crossing.
- Integrated telematic solutions for train control.
- Tracking & tracing of shipments and customer information.
- Rail logistics for temperature-controlled cargoes.
- New technologies for the transport of unaccompanied semi-trailers in intermodal transport.

All project developments were designed for a very challenging transport corridor. This corridor incorporates completely new rail infrastructure dedicated to rail freight, congested industrialised and rural areas and passes EU Member States, accession states and candidate countries. The transports considered involve different kinds of stakeholders including new entrant railway undertakings and customers from various market segments. The proposed solutions were field-validated in full-blown demonstrations within the lifetime of the project (2007-2011).

Methodology:
The objectives of CREAM have been transferred into an overall Science & Technology approach, which enables the project to achieve its objectives. The approach consists of appropriate research, training and demonstration activities, which are performed in logical succession to ensure that results of the RTD phase are communicated to managerial and operational staff (multiplicators) concerned prior to their field-validation during demonstration.

The project activities were based on the following research activities:
The objective of Research Activity 1 is to determine what kind of innovative rail freight services would be able to match the specific requirements of the logistics markets on the project corridor. In this respect the CREAM Project is committed to an integral view on rail freight service characteristics including a set of 'typical' rail performance features such as time-table, price, rate of punctuality or flexibility, the definition of appropriate rail production schemes as well as additional customer services like tracking and tracing information, road haulage services or intermediate storage of intermodal units. The result of RA 1 is a set of comprehensive templates on road-competitive rail-based supply chains, which could serve shippers and forwarders properly. These results are input to other research activities, in particular to RA 3, 4, 7 and 8.

Research Activity 1 is divided into

- RA 1.1 - Analysis of market requirements compared to the benchmark 'door-to-door' road transport
- RA 1.2 - Determination of templates on innovative rail freight services and supply chains

While RA 1 is scheduled to define appropriate business cases for rail freight services along the CREAM corridor, Research Activity 2 will investigate into the design of innovative business models and will develop a concept for transforming the currently applied model into a more competitive and customer-oriented business relationship. This work will have to distinguish two levels of rail service providers and their business models in question:

- Business model of railway undertakings: they may sell their services to shippers, forwarders, shipping lines, and intermodal operators.
- Business model of intermodal operators: they are used to incorporate two roles, the role of customers to railway undertakings and the role of logistics service providers to shippers, forwarders, road operators or shipping lines.

**Parent Programmes:**
FP6-SUSTDEV-2 - Sustainable Surface Transport

**Institute type:** Public institution

**Institute name:** European Commission

**Funding type:** Public (EU)

**Lead Organisation:**

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**Partner Organisations:**

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Hellenic Railways

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"bulgarian State Railways" - Ead

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EU Contribution: €0

Railion Deutschland Ag

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MAINZ
Germany

EU Contribution: €0

Key Results:

The CREAM project generated a number of exploitable results that are summarised in the following sections:

CREAM corridor related Quality Management System (QMS)

The QMS has been set up to achieve better quality especially with regard to punctuality and reliability and to secure an optimised use of resources and therewith providing efficient services. Main tool of this QMS is the CREAM Corridor Quality Manual that consists of one document providing all relevant definitions and further general information on the CREAM Corridor Quality Management System (‘Part I’) and several individual handbooks for initially eight dedicated high quality rail freight services on the CREAM corridor (‘Part II’). These handbooks include a documentation of train service specific information, e.g. train schedules, processes/instructions, quality criteria/quality objectives, quality control methods, quality monitoring groups and relevant company contact persons. The QMS backs on harmonised procedures and clearly defined responsibilities for improving the interfaces between the partners. It describes all relevant processes required for the delivery of the targeted quality objectives.

Status March 2012: The quality manuals are in use and suitable to be extended to other rail services.

'String of Pearls' network of open, unaccompanied intermodal rail freight services

A core component of CREAM was the development of an efficient rail operation system for intermodal services that should be able to reconcile various transport flows along the selected corridor between the Benelux countries on the one side and Turkey and Greece on the other. During the project, the system had been developed and continuously extended according to the ‘String of Pearls’ concept. Finally, at the end of 2010, the ‘String of Pearls' network consisted of numerous open, unaccompanied intermodal rail services. The 'String of Pearls' concept is characterised by the following elements:

1. The Strings: combination of existing and new open shuttle train services, developed on basis of dedicated service extension axes.
2. The Pearls: consolidation points (gateway or hub terminals), enabling bundling and reconciliation of
various transport flows.
3. The 'Strings' linking the 'Pearls': an efficient rail operation system for intermodal services on the corridor or on parts of it.

Status March 2012: The 'String of Pearls' concept is applied by the CREAM partners to ext

Policy implications

CREAM investigated a transport corridor that has an entire length of more than 3 000 km and draws a bow between Western and Central Europe and the Balkan states towards Turkey/Greece. In fact, the selected corridor stretches across Benelux countries, Germany, Austria, Italy, Slovenia, Hungary, Romania, Croatia, Serbia, Bulgaria, Turkey, F.Y.R. of Macedonia and Greece and thereby covers railway markets with rather diverse commercial, legal and technical operating conditions.

The CREAM corridor was defined and proposed on the basis of the corridor investigations conducted within the EU research project TREND (2005/2006). That time TREND analysed the situation on six European railway corridors and derived necessary actions. A main goal of TREND was to identify suitable corridors for subsequent EC funded implementation projects. Main selection criteria were the improvement potential and the expected transport volumes for rail freight.

On the considered routes towards Southeast Europe and beyond, rail freight played only a minor role in recent years, even though some elements would play in favour of rail: First, in many countries along the corridor traditionally a lot of freight transport is carried out on rail. Secondly, the large area of the corridor as a whole makes rail transport the best choice to cover long distances between these countries.

However, unfavourable framework conditions like decrepit or missing infrastructure, obsolete rolling stock, limited coordination between the actors, missing IT solutions and many more led to a shrinking market share of rail freight transport not only at international relations on this axis, but also in the respective national markets.

The railway companies' first attempts to improve train operations on the corridor, such as the ZEUS initiative between 2003 and 2006, showed that in addition to their own endeavours, changes in the framework conditions and a direct cooperation among the market partners are needed.

Freight forwarders share a great interest in using rail instead of road on the corridor, also due to the manufacturers' rising demand to put a green label on their products. Nevertheless, the service quality and frequency of existing rail services that is necessary to compete with the cheaper and flexible road services was not sufficient. This was the situation before the CREAM project started to work on various components necessary to improve the overall situation for rail.

During the five-year project period (2007-20)

Documents:

- Publishable Final Activity Report (Final report)

STRIA Roadmaps: Network and traffic management systems
Transport mode: Multimodal transport
Transport sectors: Passenger transport, Freight transport
Transport policies: Digitalisation, Societal/Economic issues
Geo-spatial type: Network corridors