Solutions and Processes to Enhance the Competitiveness of Transport by Rail in Unexploited Markets

Result in Brief

Project information

**SPECTRUM**

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Closed project

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FP7-TRANSPORT

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Coordinated by:
UNIVERSITY OF NEWCASTLE UPON TYNE

Novel train to boost the competitiveness of freight transport by rail

Faster, more reliable and flexible rail freight services are needed across Europe. An EU initiative designed a new freight train with similar performance to that of a passenger train.

Today's manufacturing techniques and logistics require reliable, time-sensitive delivery of lower density and higher value (LDHV) goods. This situation presents a market opportunity for the transportation of such freight by rail.

With EU funding, the SPECTRUM (Solutions and processes to enhance the competitiveness of transport by rail in unexploited markets) project developed a freight train that is able to provide a more rapid service for LDHV goods.

Project members identified and examined the requirements of the LDHV goods market using transport demand analysis, market intelligence and several case studies. Results show that the market is primarily served by road transport. They also identified customer needs and barriers to the transport of LDHV goods.
To address barriers, the SPECTRUM team developed new operational measures.

A rail freight vehicle was designed that satisfies both operational and logistical requirements. The technology incorporates a lightweight freight wagon, a vehicle bogie for enhanced ride features, a power conversion unit to provide power to refrigerated containers and a city logistics freight handling system. The freight train resembles its passenger counterpart in terms of power, speed, acceleration and braking, but offers significant improvement in transport and handling performance.

A cost-benefit analysis demonstrated that the SPECTRUM solution can boost the attractiveness of rail freight and achieve a modal shift in previously untapped markets.

SPECTRUM delivered services and a technology that can compete with road and air in the manufacturing techniques and logistics sectors. Rail freight is poised to grow through new market opportunities, helping to lead the shift from road to rail. Watch the SPECTRUM Bogie Animation video and 26 videos about SPECTRUM here.

**Keywords**

Rail freight, freight train, lower density and higher value goods, SPECTRUM

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