

R&D PROJECT



Title of the project

Switch and crossing optimal design and evaluation

Acronym

S-CODE

Content of the project

The structure of a switch and crossings is very complicated and currently requires many components, such as rails, check rails, crossovers, switches and turnout supports, with different lengths, fixing locations and mechanical devices to operate the switches.

To simplify systems to reduce complexity with fewer components, new designs, controls, kinematic actuation and materials must be developed. In making such design changes, it is desirable to analyse and optimise the impact of wheel-rail interaction when a train switches from one track to another, to address known failure modes and to eliminate safety issues.

The aim of the S-CODE project is to initially research, develop, validate and integrate radically new concepts for switches and crossings that have the potential to lead to increases in capacity, reliability and safety, while reducing investment and operating costs.

General objectives

The project will identify different technological concepts that can be integrated with each other to achieve significantly improved performance for switches and crossings based on new concepts of operation. Consortium members will base themselves on existing European and national research projects to bring together technologies and concepts that significantly reduce the limitations associated with existing switching technologies and develop different solutions.

Results and conclusions

The physical demonstrators have subsequently been validated in terms of the verification of the basic principles and expected characteristics resulting from the theoretical development in the previous phase of the project. The 3D models created in a virtual environment have been subjected to analyses and simulations, which also virtually verify the basic functionality of a given technology.



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BUSSINESS AREAS

Infrastructure area
COMSA, S.A.

DURATION

2013-2016

BUDGET

4.999.771,25€

KEYWORDS

Railway, Switches & Crossings,
Capacity, Reliability, Safety,
Security

COORDINATOR

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EXTERNAL FUNDING

