

PROJECT

RUN2RAIL

Innovative RUNning gear soluTiOns for new dependable, sustainable, intelligent and comfortable RAIL vehicles

Funding: European (Horizon 2020)

Duration: Sep 2017 - Aug 2019

Status: Complete



[CORDIS RCN : 211969](#)

Objectives:

The RUN2RAIL project will explore an ensemble of technical developments for future running gear, looking into ways to design trains that are more reliable, lighter, less damaging to the track, more comfortable and less noisy. These innovations will be proposed in the form of case studies supported by the methods and tools elaborated in the project.

The project develops across four thematic Work Streams: Innovative sensors & condition monitoring, Optimised materials & manufacturing technologies, Active suspensions & mechatronics, Noise & Vibration. In these four areas, the project will provide a coordinated set of technical key contributions including (but not limited to):

- Smart sensors and smart running gear components with self-diagnosing capability;
- Use of novel materials and manufacturing methods in combination with intelligent / active suspensions to enable non- conventional running gear concepts;
- Identification of efficient fabrication processes for the running gear (3D metal printing, automated tape layering of composite materials);
- Assessment of existing off-the-shelf technology for active control coming from other sectors; development of a novel and comprehensive methodology for predicting the transmission of noise and vibration from the running gear to the carbody.

Within the four workstreams, the project will also perform a preliminary evaluation of the related regulatory and standardisation issues, together with a careful assessment of the impacts of the new solutions proposed. The research conducted will be multidisciplinary, i.e. based on the integration of different branches of engineering such as mechanical, materials, electronic and electrical engineering, and will establish models and formal methods to explore a full set of technological developments, exploiting at best the matching mix of talent and diverse skills offered by the Consortium.

Parent Programmes:

[H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport Shift2Rail - Shift2Rail](#)

Institute type: Public institution

Institute name: European Commission

Funding type: Public (EU)

Partners:

POLITECNICO DI MILANO - Italy

THE UNIVERSITY OF HUDDERSFIELD - United Kingdom

UNIVERSITY OF SOUTHAMPTON - United Kingdom

KUNGLIGA TEKNISKA HOEGSKOLAN - Sweden

UNIVERSITA DEGLI STUDI DI ROMA LA SAPIENZA - Italy

D'APPOLONIA BELGIUM - Belgium

LUCCHINI RS SPA - Italy

BLUE ENGINEERING SRL - Italy

VIBRATEC - France

METRO DE MADRID SA - Spain

UNIVERSITAT POLITECNICA DE VALENCIA - Spain

CDH AG - Germany

EVOLEO TECHNOLOGIES LDA - Portugal

BOSCH REXROTH AG - Germany

Organisation: UNION DES INDUSTRIES FERROVIAIRES EUROPEENNES - UNIFE

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Organisation Website: [Unife](http://unife.eu)

Technologies:

Manufacturing processes
Manufacturing processes for running gear
Development phase: Research/Invention

"Tools for noise prediction and measurement of trains and subsystems"
Development phase: Research/Invention

Rail vehicle design
New running gear concept with active suspension
Development phase: Research/Invention

Sensor technologies
Smart sensors and smart running gear components for self diagnosis
Development phase: Research/Invention

STRIA Roadmaps: Vehicle design and manufacturing, Infrastructure

Transport mode: Rail transport

Transport sectors: Passenger transport, Freight transport
Societal/Economic issues, Environmental/Emissions

Transport policies: aspects

Geo-spatial type: Other