ROLL2RAIL

New Dependable Rolling Stock for a More Sustainable, Intelligent and Comfortable Rail Transport in Europe

**Funding:** European (Horizon 2020)
**Duration:** May 2015 - Oct 2017
**Status:** Complete
**Total project cost:** €16,000,000
**EU contribution:** €16,000,000

**Call for proposal:** H2020-MG-2014_TwoStages
**CORDIS RCN:** 193368

**Objectives:**

The ROLL2RAIL project aims to develop key technologies and to remove already identified blocking points for radical innovation in the field of railway vehicles, as part of a longer term strategy to revolutionise the rolling stock for the future.

The high level objectives of the work are to pave the way to:

- Increase the capacity of the railway system and bring flexibility to adapt capacity to demand
- Increase availability, operational reliability and therefore punctuality of the vehicles
- Reduce the life cycle costs of the vehicle and the track
- Increase the energy efficiency of the system
- Improve passenger comfort and the attractiveness of rail transport

Specific developments are proposed the scope of ROLL2RAIL:

- Basis of a radically new traction technology based on emerging electronic components leading towards more energy-efficient traction, which is lighter and more reliable while reducing the noise emitted
- New wireless technology applied to train control functionalities will allow more flexible coupling to increase line capacity
- Carbody solutions based on lightweight composite materials to reduce weight
- A way of quantifying the life-cycle cost impact of new technological solutions for running gear
- Knowledge database of the variety of requirements in Europe for the braking systems to bring down barriers to step-change innovation in this area
- Standardised methodologies for assessing attractiveness and comfort from the passenger’s point of view
- Methodology for noise source separation techniques allowing implementation of novel and more efficient noise mitigation measures

It is also the objective of ROLL2RAIL to serve as a preparation for a fast and smooth start-up of the large scale initiative SHIFT2RAIL. All ROLL2RAIL results will ultimately lead to demonstration in real vehicles or relevant environments in SHIFT2RAIL.

**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)

**Lead Organisation:**
European Union Road Federation

Address:
Avenue Louise 106
1050 BRUXELLES
Belgium

Organisation Website:
http://www.unife.org

EU Contribution: €240,000

Partner Organisations:

Construcciones Y Auxiliar De Ferrocarriles Investigacion Y Desarrollo Sl

Address:
JOSE MIGUEL ITURRIOZ 26
20200 BEASAIN
Spain

Organisation Website:
http://www.caf.net

EU Contribution: €1,625,211

Deutsche Bahn Ag

Address:
Postdamer Platz 2
10785 BERLIN
Germany

Organisation Website:
http://www.deutschebahn.com

EU Contribution: €216,281

Kungliga Tekniska Hoegskolan

Address:
Brinellvagen 8
100 44 Stockholm
Sweden

EU Contribution: €396,645

Sncf

Address:
34 Rue du Commandant René Mouchotte
75014 PARIS
France

Organisation Website:
http://www.sncf.com

EU Contribution: €602,600

Metro De Madrid

Address:
C/ Cavanilles nº58
28007 MADRID
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**Fraunhofer Gesellschaft Zur Foerderung Der Angewandten Forschung E.v.**

- **Address:** Hansastrasse 27C, 80686 Munchen, Germany
- **Organisation Website:** [http://www.fraunhofer.de](http://www.fraunhofer.de)
- **EU Contribution:** €426,709

**Thales Six Gts France Sas**

- **Address:** Avenue Des Louvresses 4, 92700 Colombes, France
- **EU Contribution:** €240,000

**Stadler Rail Valencia Sau**

- **Address:** C/ Mitxera 6, 46550 Albuixech, Spain
- **EU Contribution:** €365,984

**Trafikverket**

- **Address:** RodaVagen 1, 781 89 Borlange, Sweden
- **Organisation Website:** [http://www.trafikverket.se](http://www.trafikverket.se)
- **EU Contribution:** €100,000

**Trenitalia Cargo S.p.a.**

- **Address:** Piazza della Croce Rossa, 1, 00161 Roma, Italy
- **Organisation Website:** [http://www.trenitalia.it](http://www.trenitalia.it)
- **EU Contribution:** €227,500

**Network Rail Infrastructure Limited**
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<td>Via San Nazaro 19, 16145 GENOA, Italy</td>
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<td>Paris Lodron Universität Salzburg</td>
<td>Kapitelgasse 4 - 6, 5020 SALZBURG, Austria</td>
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<td>Ansaldo Trasporti - Sistemi Ferroviari S.p.a.</td>
<td>Via Argine, 425, 80100 NAPOLI, Italy</td>
<td>€63,333</td>
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<td>Patentes Talgo Sl</td>
<td>Paseo Del Tren Talgo 2, 28290 Las Rozas De Madrid, Spain</td>
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<td>Deutsches Zentrum Fr Luft Und Raumfahrt E.v</td>
<td>Linder Hoehe, 51147 KOELN, Germany</td>
<td>€746,084</td>
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<td>Kompetenzzentrum - Das Virtuelle Fahrzeug Forschungsgesellschaft M.b.h.</td>
<td>Inffeldgasse 21a / 1. Stock 8010 GRAZ Austria</td>
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<tr>
<td>Zilinska Univerzita V Zilina</td>
<td>Univerzitha 821 1026 Zilina Slovakia</td>
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<td>University Of Southampton</td>
<td>Highfield Southampton SO17 1BJ United Kingdom</td>
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<td>Hitachi Rail Italy Spa</td>
<td>VIA ARGINE 425 80147 NAPOLI NA Italy</td>
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<td>Knorr Bremse Systeme Fr Schienenfahrzeuge GmbH</td>
<td>Moosacher Strasse 80 401060 MUNCHEN Germany</td>
<td>€134,674</td>
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<tr>
<td>Bombardier Transportation GmbH</td>
<td>Schoneberger Ufer 1 10785 Berlin Germany</td>
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Organisation Website: http://www.bombardier.de/en/transportation
EU Contribution: €2,052,407

Politecnico Di Milano
Address: Piazza Leonardo Da Vinci 32
20133 Milano
Italy
Organisation Website: http://www.polimi.it
EU Contribution: €138,469

Unicontrols A.s.
Address: KRENICKA 2257
100 00 PRAHA
Czech Republic
Organisation Website: http://www.unicontrols.cz
EU Contribution: €231,961

Railenium
Address: 180 Rue Joseph-Louis Lagrange
59540 Valenciennes
France
Organisation Website: https://railenium.eu/en/
EU Contribution: €83,000

Institut Francais Des Sciences Et Technologies Des Transports, De L'aménagement Et Des Réseaux
Address: 2, Avenue Du General Malleret-Joinville
94114 Arcueil
France
EU Contribution: €270,824

Faiveley Transport Italia S.p.a.
Address: Via Volvera 51
10045 PIOSSASCO (TURIN)
Italy
Organisation Website: http://www.faiveleytransport.com
EU Contribution: €99,247

Alstom Transport Sa
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<td>Alstom Transport Sa</td>
<td>3 Avenue André Malraux 92300 LAVALLOIS-PERRET France</td>
<td><a href="http://www.alstom.com">http://www.alstom.com</a></td>
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<td>Siemens Ag</td>
<td>Wittelsbacherplatz 2 80333 MUENCHEN Germany</td>
<td><a href="http://www.siemens.com">http://www.siemens.com</a></td>
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<tr>
<td>Asociacion Centro Tecnologico Ceit</td>
<td>PASEO MANUEL DE LARDIZABAL 15 20018 SAN SEBASTIAN Spain</td>
<td><a href="http://www.ceit.es">http://www.ceit.es</a></td>
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<td>Ikerlan - Technological Research Centre</td>
<td>Paseo J.M. Arizmendiarieta 2 20500 MONDRAGON Spain</td>
<td><a href="http://www.ikerlan.es">http://www.ikerlan.es</a></td>
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**Technologies:**
- Non destructive testing
- Railway and rolling stock condition monitoring system

**Development phase:** Demonstration/prototyping/Pilot Production

**STRIA Roadmaps:** Vehicle design and manufacturing

**Transport mode:** Rail transport

**Transport sectors:** Passenger transport, Freight transport

**Transport policies:** Digitalisation

**Geo-spatial type:** Other