

PROJECT

## X2Rail-4

### Advanced signalling and automation system - Completion of activities for enhanced automation systems, train integrity, traffic management evolution and smart object controllers

**Funding:** European (Horizon 2020)

**Duration:** Dec 2019 - Feb 2023

**Status:** Ongoing

**Total project cost:** €41,108,685

**EU contribution:** €17,900,873



**Call for proposal:** H2020-S2RJU-CFM-2019

[CORDIS RCN : 226916](#)

#### Objectives:

X2RAIL-4 is the 4th project of the Shift2Rail members in the IP2 “Advanced Traffic Management & Control Systems” domain and it aims to continue the research and development of key technologies within the following Technology Demonstrators (TDs):

- Railway line capacity increase (ATO up to GoA4)-TD2.2 (WP3, WP4, WP5): Finalize the activities started in X2Rail-1 by completing the GoA2 Specification. Develop ATO GoA4 prototypes. Integrate and test Obstacle Detection devices and “environment sensors” in cooperation with IP5 TD5.1.3.
- On-Board Train Integrity-TD2.5 (WP6, WP7): Finalize the activities started in X2Rail-2. Define, develop and test complete On-Board Train Integrity system prototypes able to be applied in every train typology (i.e. Passengers and Freight trains with wired and wireless communication).
- Traffic Management Evolution-TD2.9 (WP8, WP9, WP10): Finalize the activities started in X2Rail-2. Define, develop and test various elements of a Traffic Management System platform. Define and design a communication platform (Integration Layer) using standardized data structures and processes to manage the Communication/Data exchange between different services/clients and supporting TMS applications connected to other multimodal operational systems.
- Smart radio-connected all-in-all wayside objects-TD2.10 (WP11, WP12): Finalize the activities started in X2Rail-1. Develop, implement and validate technical demonstrator. Develop and test prototype providing data exchange between trackside equipment and signalling devices via wireless connection; reduction of required cabling; increase on the availability of Maintenance Data, reduction of maintenance costs; support to preventive maintenance.

#### Parent Programmes:

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

**Institute type:** Public institution

**Institute name:** European Commission

**Funding type:** Public (EU)

#### Lead Organisation:

**Alstom Transport Sa**

**Address:**

48 RUE ALBERT DHALENNE  
93400 SAINT OUEN  
France

**Organisation Website:**

<http://www.alstom.com>

**EU Contribution:** €1,439,607

## Partner Organisations:

### Thales Deutschland Gmbh

**Address:**

THALESPLATZ 1  
71254 DITZINGEN  
Germany

**Organisation Website:**

<http://www.thalesgroup.com/germany>

**EU Contribution:** €2,166,894

### Hitachi Rail Sts Spa

**Address:**

VIA MANTOVANI 3/5  
16151 GENOVA  
Italy

**Organisation Website:**

<http://www.ansaldo-sts.com/it/index.html>

**EU Contribution:** €2,741,504

### Deutsche Bahn Ag

**Address:**

Postdamer Platz 2  
10785 BERLIN  
Germany

**Organisation Website:**

<http://www.deutschebahn.com>

**EU Contribution:** €850,581

### Bombardier Transportation Sweden Ab

**Address:**

OSTRA RINGVAGEN 2  
721 73 VASTERAS  
Sweden

**Organisation Website:**

<http://www.bombardier.com>

**EU Contribution:** €1,254,097

### Trafikverket

**Address:**

RodaVagen 1  
781 89 BORLANGE  
Sweden

**Organisation Website:**

<http://www.trafikverket.se>

**EU Contribution:** €487,257

**Network Rail Infrastructure Limited****Address:**

1 Eversholt Street  
London  
NW1 2DN  
United Kingdom

**EU Contribution:** €1,043,451

**Deutsches Zentrum Fr Luft Und Raumfahrt E.v****Address:**

Linder Hoehe  
51147 KOELN  
Germany

**Organisation Website:**

<http://www.dlr.de>

**EU Contribution:** €158,651

**Siemens Mobility Gmbh****Address:**

OTTO-HAHN-RING 6  
81379 MUNCHEN  
Germany

**EU Contribution:** €931,399

**Slovenske Zeleznice Doo****Address:**

Kolodvorska Ulica 11  
1000 Ljubljana  
Slovenia

**Indra****Address:**

Avenida de Bruselas, 35  
Alcobendas Madrid  
Spain

**Organisation Website:**

<http://www.indra.es>

**EU Contribution:** €2,129,638

**Hacon Ingenieurgesellschaft Gmbh****Address:**

Lister Strasse 15  
30163 HANNOVER  
Germany

**Organisation Website:**

<http://www.hacon.de>

**EU Contribution:** €2,179,125

**Mer Mec Spa****Address:**

VIA OBERDAN 70  
70043 MONOPOLI  
Italy

**Organisation Website:**

<http://www.mermecgroup.com>

**EU Contribution:** €212,868

**Sncf Reseau****Address:**

15-17 Rue Jean-Philippe Rameau  
93418 La Plaine Saint-Denis  
France

**EU Contribution:** €145,764

**Caf Signalling S.I****Address:**

CALLE JUAN FERMIN GILISAGASTI 4 PLANTA 2  
20018 SAN SEBASTIAN  
Spain

**Organisation Website:**

<http://www.eliopseinalia.com>

**EU Contribution:** €596,385

**Obb-Infrastruktur Ag****Address:**

PRATERSTERN 3  
1020 WIEN  
Austria

**Organisation Website:**

<http://www.oebb.at/infrastruktur>

**Railenium****Address:**

180 RUE JOSEPH-LOUIS LAGRANGE TECHNOPOLE TRANSALLEY  
59300 FAMARS  
France

**Organisation Website:**

<http://www.railenium.eu>

**EU Contribution:** €581,630

**Azd Praha Sro****Address:**

ZIROVNICKA 3146/2, ZABEHLICE  
106 00 PRAHA  
Czech Republic

**Organisation Website:**

<http://www.azd.cz>

**EU Contribution:** €806,408

**Schweizerische Bundesbahnen Sbb**

**Address:**

HILFIKERSTRASSE 1  
3014 BERN  
Switzerland

**Organisation Website:**

<http://www.sbb.ch>

**EU Contribution:** €19,721

**Asociacion Centro Tecnologico Ceit**

**Address:**

PASEO MANUEL DE LARDIZABAL 15  
20018 SAN SEBASTIAN  
Spain

**Organisation Website:**

<http://www.ceit.es>

**EU Contribution:** €155,893

**Technologies:**

Rail operations  
Standardisation and integration of traffic management

**Development phase:** Research/Invention

**STRIA Roadmaps:**

Cooperative, connected and automated transport, Network and traffic management systems

**Transport mode:** Rail transport

**Transport sectors:** Passenger transport, Freight transport  
Societal/Economic issues,

**Transport policies:** Safety/Security

**Geo-spatial type:** Other