

PROJECT

EMULRADIO4RAIL

EMULATION OF RADIO ACCESS TECHNOLOGIES FOR RAILWAY COMMUNICATIONS

Funding: European

Duration: Dec 2018 - Dec 2020

Status: Complete

Total project cost: €748,098

EU contribution: €748,098



Call for proposal: H2020-S2RJU-OC-2018

[CORDIS RCN : 221647](#)

Objectives:

EMULRADIO4RAIL will provide an innovative platform for tests and validation of various radio access technologies (Wi-Fi, GSM-R, LTE, LTE-A, 5G and satellites) that combines very new approaches for testing so called System in the loop (SITL) and Hardware in the loop (HITL). The adaptable communication prototypes will be coupled to both simulations of the communication core network and emulation of various radio access technologies thanks to the coupling between discrete event simulator such as RIVERBED modeler (former OPNET modeler), Open Air Interface, various radio channel emulators, Network emulator, models of IP parameters and real physical systems. The radio access emulation tool will offer a graphical based interface for the users.

EMULRADIO4RAIL platform will work at IP level i.e. the radio access emulator will reproduce the radio access behaviour as seen by the applications.

EMULRADIO4RAIL will investigate the various communication and environment scenarios in railways covering degraded modes, outages, network overload scenarios, interferences and other perturbations which occur in the railway environment or can be expected in the future. Particular focus will be proposed on interferences, taking into account also intentional ones.

EMULRADIO4RAIL will analyse and select the communications characteristics perceivable by the applications and services using the communication bearer (like throughput, packet loss, jitter, etc.). EMULRADIO4RAIL will assess the communication capabilities of existing radio access networks and how they could be emulated.

EMULRADIO4RAIL will provide support to Shift2Rail members for integration of the radio access emulation platform in the verification labs.

EMULRADIO4RAIL is driven by a consortium composed of the main research and development actors in wireless telecommunications for rail involved in current and recent state-of-the art projects concerning the technologies, methodologies and equipment that should be considered.

Parent Programmes:

[Shift2Rail - Shift2Rail](#)

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

Funding type: Public (EU)

Lead Organisation:

Institut Francais Des Sciences Et Technologies Des Transports, De L'aménagement Et Des Reseaux

Address:

BOULEVARD ISAAC NEWTON 14 CITE DESCARTES 14-20

77447 MARNE LA VALLEE CEDEX 2
France

Organisation Website:

<http://www.ifsttar.fr>

EU Contribution: €165,200

Partner Organisations:

Metro De Madrid Sa

Address:

Calle Cavanilles 58
28007 MADRID
Spain

Organisation Website:

<http://www.metromadrid.es>

EU Contribution: €98,138

Eurnex E. V.

Address:

HARDENBERGSTRASSE 12
10623 BERLIN
Germany

Organisation Website:

<http://www.eurnex.net>

EU Contribution: €42,500

Consorzio Universita Industria - Laboratori Di Radiocomunicazion I

Address:

CORSO D ITALIA 19
00198 ROMA
Italy

Organisation Website:

<http://www.radiolabs.it>

EU Contribution: €110,000

Universite De Lille

Address:

42 RUE PAUL DUEZ
59800 LILLE
France

EU Contribution: €104,448

Danmarks Tekniske Universitet

Address:

Anker Engelunds Vej
DKN/A2800 Kgs. Lyngby
Denmark

Organisation Website:

<http://www.dtu.dk>

EU Contribution: €109,375

Ikerlan - Technological Research Centre

Address:

Paseo J.M. Arizmendiarrieta 2
20500 MONDRAGON
Spain

Organisation Website:

<http://www.ikerlan.es>

EU Contribution: €118,438

Technologies:

Information systems
Education and research in the railway sector

Development phase: Research/Invention

STRIA Roadmaps: Other specified

Transport mode: Rail transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Other specified

Geo-spatial type: Network corridors