

Project Members

PROJECT COORDINATOR



TECHNICAL LEADER



PROJECT PARTNERS



This project has received funding from the Shift2Rail Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 777576.

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Project Website

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Energy harvesting for signalling
and communication systems



Project Overview

ETALON (Energy harvesting for signalling and communication systems) is a Shift2Rail IP2 Open Call project within the Horizon2020 Programme of the European Commission. ETALON will contribute to the enhancement of train integrity functionalities, providing a suitable energy supply for train integrity checking functions (particularly targeted at cases where trains do not have any power supply available on the wagons) and a robust radio communication system between vehicles that could be the basis for a train integrity check.



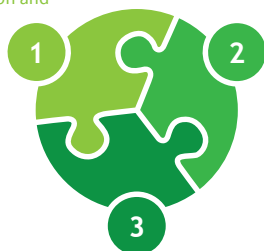
Ambition and Objectives

The challenge addressed by this project is to contribute significantly to making the railway system a more competitive, more attractive and more sustainable mode of transport.

- **More Competitive:** ETALON will contribute to the implementation of train integrity detection, that is critical to making moving block train control possible also for freight transport, with a corresponding increase in capacity and efficiency for all train types, compared with other transport modes.
- **More Attractive:** contributing to the development of train integrity detection, ETALON will support the efficiency of rail transport, through increased capacity and reduction of travel time, thereby attracting new customers, both for passengers and for freight services.
- **More Sustainable:** ETALON will contribute to the reduction of infrastructure costs, providing technological solutions for the elimination of trackside cabling.

Among its objectives ETALON envisages the specification and development of energy harvesting solutions to support train integrity detection and Smart Radio connected wayside objects which are economically viable and suitable, taking into consideration on-board and off-board radio communication solutions, safety critical aspects as well as reliability and availability in difficult rail environments.

Increase line capacity contributing to train integrity detection and moving block.



Cost Reduction throughout minimization of cables and trackside infrastructure

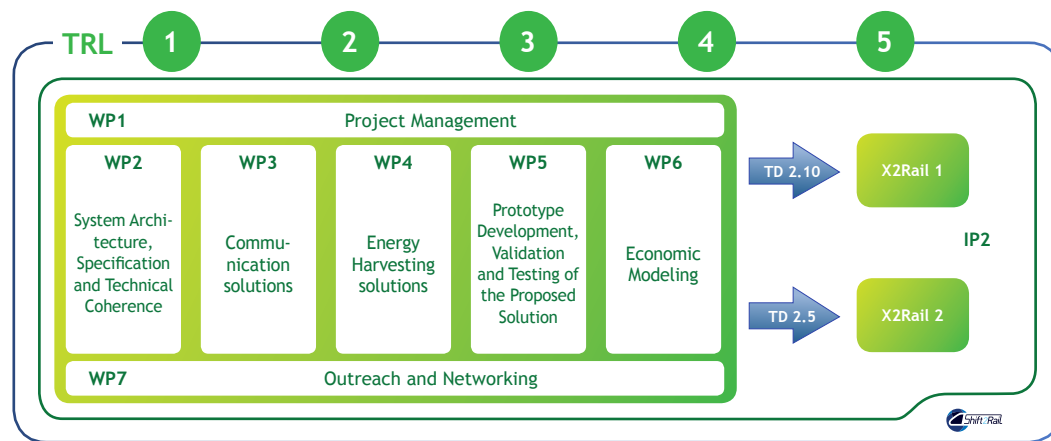
Provide power supply source on freight wagon, solving one of its main problem

Organization and Links

The overall objective of the proposed ETALON project is to contribute to the objectives of Shift2Rail JU aiming to boost the attractiveness and competitiveness of rail mode transport and therefore facilitate the shift of 30% of road freight over 300 Km by 2030 and 50% by 2050.

ETALON will contribute to this main objective throughout the design, development, prototyping and testing of new innovative Communication and Energy Harvesting solutions that will help to achieve the goals defined by the Shift2Rail Joint Undertaking Multi-Annual Action Plan MAAP. ETALON in collaboration with the complementary Call for Members projects of the Innovation Programme 2 (IP2) will participate actively in the achievement of the goals of the technical demonstration TD 2.5 On-board Train Integrity solutions and TD 2.10 Smart Radio connected all-in-all Wayside Objects.

The technical and economic validation of prototype technologies developed by the project will complete the initial work that aims to define the System Architecture and Requirements Specification. The final validation and testing of the selected prototype technologies will be performed in laboratories, as well as controlled real environment. The combination of the ETALON outputs with other Shift2Rail IP2 activities will bring a benefit not only in rail traffic management, but also in control system and will contribute towards the success of Shift2Rail IP2 Technologies Demonstrators.



ETALON In a Nutshell



1.7M€

Total Project Value



9

Partners



30

Months duration