

Energy Harvesting for Signalling and Communication

D 7.1 Set-up Public Website

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CI	Classified, information as referred to in Commission Decision 2001/844/EC	

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REPORT CONTRIBUTORS

Name	Company	Details of Contribution
Jose Bertolin	UNIFE	Writing of the Deliverable. Monitoring and supervision of the deliverable.
Klevisa Ceka	RINA-C	Quality Check

EXECUTIVE SUMMARY

The project public website is one of the main pillars of the ETALON project dissemination and exploitation strategy.

The document summarises the implementation of the public website and describes all of its main elements and their functionality.

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NO	LEGAL NAME	SHORT NAME
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SET-UP PUBLIC WEBSITE

1. INTRODUCTION

Etalon public website is available on the internet address <http://www.etalon-project.eu/home.aspx> and is compatible with most of the modern web-browsers, including those running on the mobile platforms, for which the graphical and navigation elements are adjusted to better fit the screen size limitations.

The website is designed as the dissemination tool which allows easy access to ETALON – related information for the interested parties most importantly the railway stakeholders, offering general information, both static and dynamic. The website is the basic tool within the project dissemination and exploitation strategy.

1.1 LIST OF ACRONYMS

Acronym	Meaning
EC	European Commission
WP	Work Package

2. WEBSITE STRUCTURE AND CONTENT

2.1 WEBSITE HEADER AND FOOTER

The elements in the header and footer of the website are fixed regardless of the page actually chosen.

- The website header has a static part that apart from the links to Shift2rail and European Commission websites, includes a searcher that allows a user to search information in the website introducing words or complete sentences. The dynamic area allows a user to navigate to other parts of the website;
- The website footer contains:
 - Website map with direct link to all the sections that facilitates web surfing.
 - Direct Links to Shift2Rail and European Union Website within funding description and Etalon project grant agreement number identification.



Figure 1: Upper Navigation Panel



Figure 2: Website footer (static)

2.2 HOMEPAGE

Homepage introduces the website and is designed in the style fully in line with the visual identity of the project. The main functional elements are the shortcuts to the main sections of the web: Description of the project, Last News and Events.

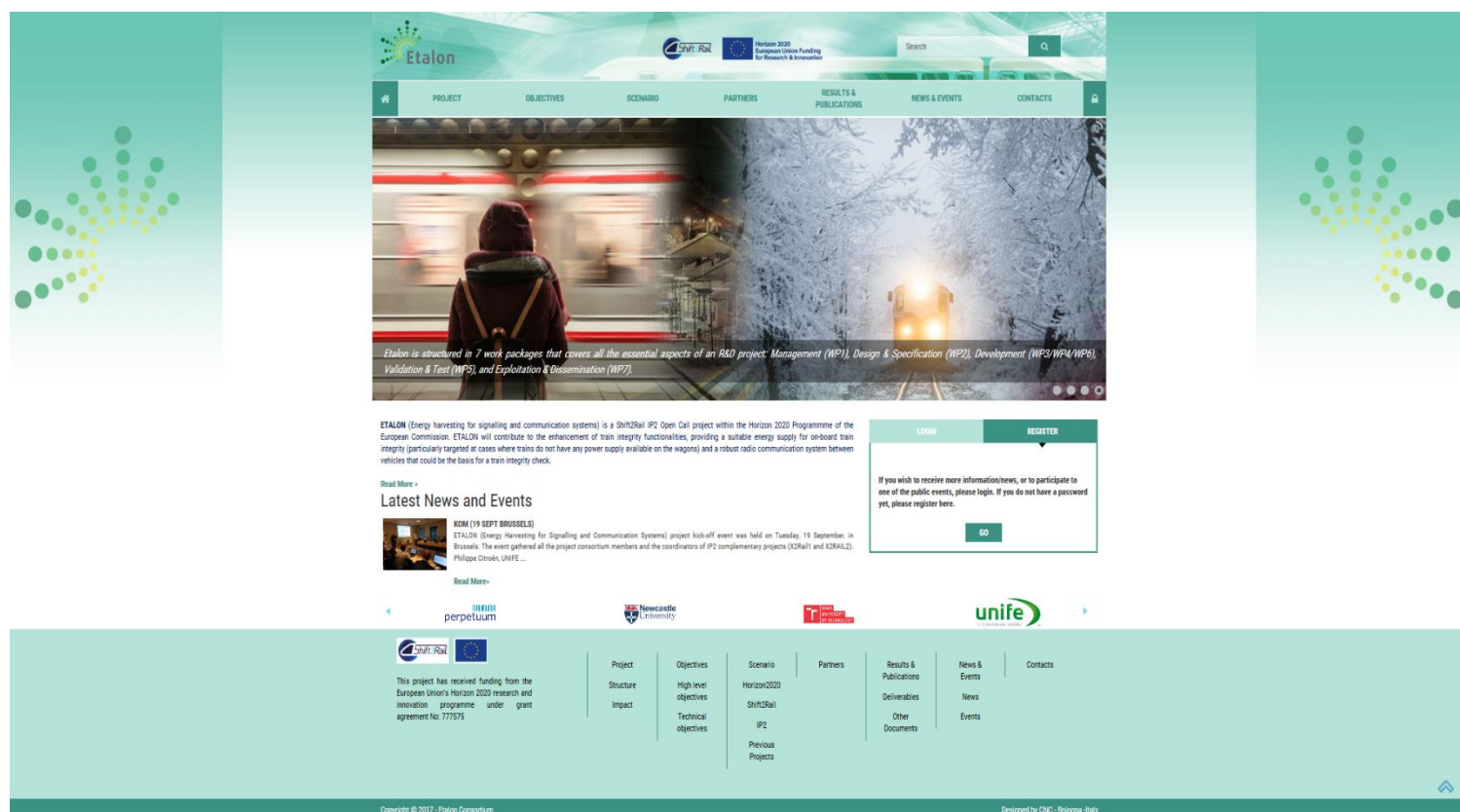


Figure 3: Homepage

2.3 PAGE: PROJECT

In this section the information could be obtained by selecting one of the two sub-menus:

- Structure
- Impact

The selected sub-menu changes dynamically the main content of the website presenting different information depending on the selection.

Structure Section presents the composition of ETALON project based on WP structure and provide a short description of each WP main objective as well as linkage among them.



Structure

Etalon is structured in 7 work packages that covers all the essential aspects of an R&D project: Management (WP1), Design & Specification (WP2), Development (WP3/WP4/WP6), Validation & Test (WP5), and Exploitation & Dissemination (WP7).

WP	Goal
WP1 Project Management	This work package is responsible for the assurance of the effectiveness coordination of the project, management of consortium activities and overall administrative and financial activities. It will also manage the risks and propose mitigation strategies and contingency measures if needed.
WP 2 System Architecture, Specifications and Technical Coherence	Apart from the technical coordination of the project, WP2 will define the overall Functional Requirements, collect the System Requirements of the On-Board Train Integrity Solution and Trackside Energy Harvesting for Object Controllers and write the requirements coming from the Engineering Rules and Maintenance needed for the overall system. To ensure technical coherence and alignment with Shift2Rail projects, this WP will act as liaison with the relevant activities of within Shift2Rail JU, specially but not only limited to the projects emerging from the call of the complementary topics concerning IP2.
WP 3 Communication Solutions	A first thorough analysis of the state of the art of on board train integrity (OTI) and trackside communication solutions performed in this WP3 will be the base for defining an architecture, SIL 4 able, for wireless communication along the train and a reliable and secure network infrastructure for track-side communication powered by energy harvesting. Seamless integration with existing infrastructure will be pursued establishing interfaces to available on and off train communication systems.
WP 4 Energy harvesting Solutions	The development or adaptation of an energy harvesting solution that can deliver a reliable and safe power for on-board and trackside signaling functions is the main objective of this WP4. This main objective will be based on a first survey and analysis of energy harvesting technologies available and in development and will take into consideration the compatibility with OTI solutions, the technical requirements specified in WP2 and the economic model for trackside signaling systems coming from WP6.
WP 5 Prototype Development, Validation and Testing of the proposed Solution	The objective of this WP5 is the integration of the energy harvesting and communication technologies selected and developed in previous work package into prototypes and test it in laboratories and/or controlled real environment to demonstrate the effectiveness of the proposed solution.
WP 6 Economic Modelling	WP6 will investigate economic models for energy harvesting system meant to provide suitable energy supply for trackside signaling equipment in order to minimize cables and trackside infrastructure. The economic models generated by this WP will be one of the pillars for WP4 decision-making.
WP 7 Outreach and Networking	This WP seeks to ensure proper dissemination and promotion of the project, providing the highest visibility and raising public awareness of ETALON framework, objective, content and results to all the important actors and stakeholders of the European railway sector. A further objective of this WP is to collect feedback on the project's preliminary outcomes to increase the quality and acceptance of the final results.

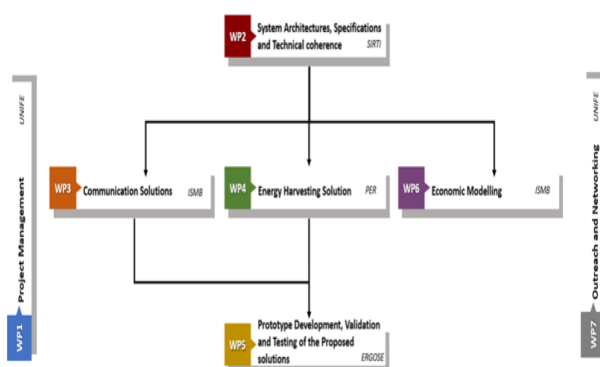


Figure 4: Project Structure section

Section Impact summarize the main expected impacts that the consortium envisages in the railway sector at the end of the project.



Impact

The challenge addressing by this project is to contribute significantly in rendering the railway ecosystem doing it more competitive, more attractive and more sustainable.

1. **More Competitive:** Etalon will contribute to the implementation of on-board train integrity, that will make moving block possible also for freight transport, with a corresponding increase in capacity and efficiency, compared with other transport modes.
2. **More Attractive:** Contributing to development of on-board train integrity, ETALON will support the efficiency of rail transport, through increased capacity and reduction of travel time, thereby attracting new customer, both for passengers and for freight services.
3. **More sustainable:** Etalon will give a major contribution to reduction of infrastructure costs, providing technological solutions for the elimination of trackside cabling.



Figure 5: Consortium description section

2.4 PAGE: OBJECTIVES

This section summarises the main project target, differentiated between High Level Objectives and Technical Objective that constituted the two sub-menus of the section.

High Level Objectives section includes, as its name said, the highest objectives from a global point of view. It means the objective that could be more relevant for European railway stakeholders.



High level objectives

The next high-level objectives aim to contribute to the definition and development of the Train Integrity solution essential for the application of the Moving block and a basic architecture able to power the new Object Controller.

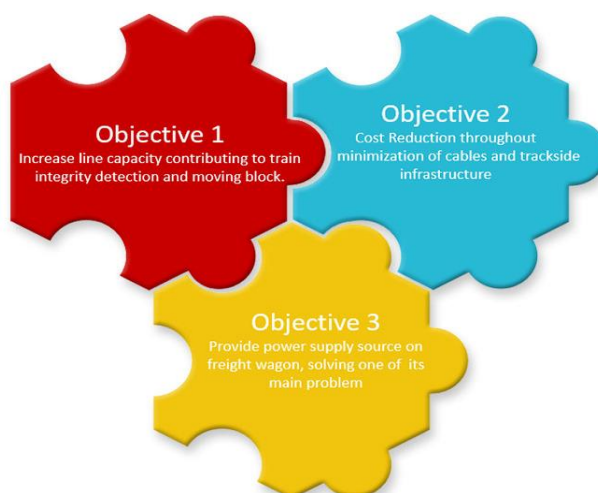


Figure 6: High Level Objectives section

Technical Objectives section includes more precise objectives related to the technical solution envisaged in the project. This section also contains the positioning of the project within Shift2rail programme.



Technical objectives

The technical objectives of ETALON project are in line with the overall scope and objectives of Shift2Rail, ETALON will contribute to the goals of TD 2.5 and TD 2.10. Achieving the basic knowledge of the best system architecture for further Train Integrity development on board integration

1. To identify, adapt and validate effective solution for on-board Train Integrity radio communication system (including antennas suitable to be installed in the queue of a very long train)
2. To identify, adapt and validate effective energy generation solution for feeding on-board Train Integrity system.

Defining the basic architecture (made up of components and interfaces able to power the new Objects Controllers)

1. To identify, adapt and validate effective solution for on-board Train Integrity radio communication system (including antennas suitable to be installed in the queue of a very long train)
2. To identify, adapt and validate effective energy generation solution for feeding on-board Train Integrity system.

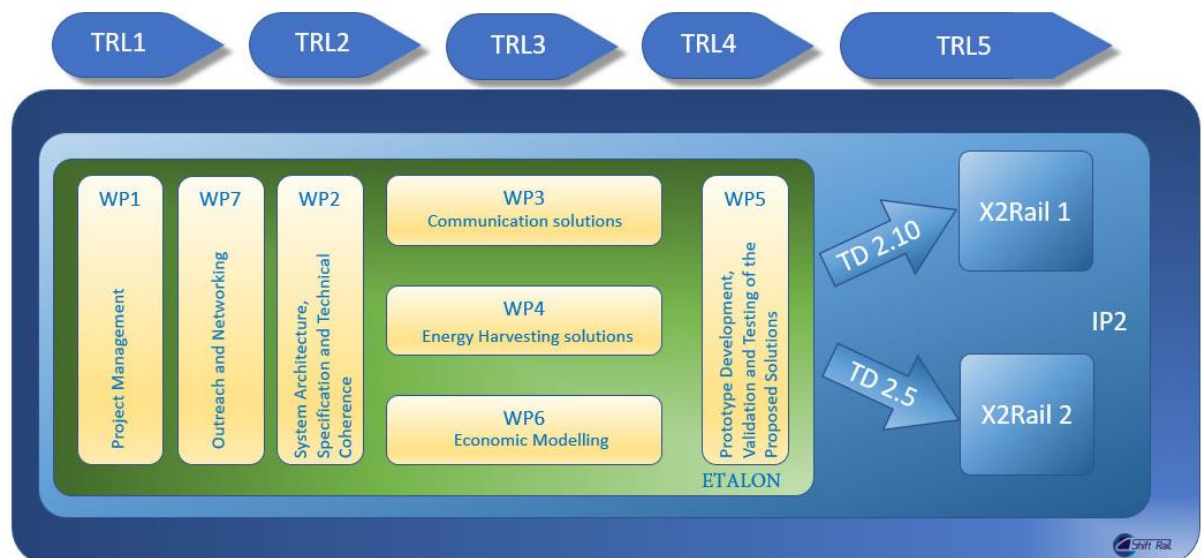


Figure 7: Technical Objectives Section

2.5 PAGE: SCENARIO

The positioning of ETALON project is the main objective of this section. It aims to describe the scenario where ETALON is allocated in terms of European Union Research and Innovation. Through its four sub-menus a user could browser the initiatives where ETALON is included as well as previous R&I project linked to ETALON.

Horizon2020

Horizon 2020 is the current Framework Programme for Research & Innovation of the European Union, following the FP7 (Framework Programme 7), which was deployed between 2007 and 2013 with a total budget of about € 50 billion.

Horizon 2020 is the biggest EU Research and Innovation programme ever, with nearly €80 billion of funding available over 7 years (2014 to 2020) – in addition to the private investment that this money will attract. It promises more breakthroughs, discoveries and world-firsts by taking great ideas from the lab to the market.

A significant budget (about € 6,3 billion) is allocated to the Transport Challenge, with the aim to boost the competitiveness of the European transport industries and achieve a European transport system that is resource-efficient, climate- and environmentally-friendly, safe and seamless for the benefit of all citizens, the economy and society.

Within such context, for the first time the railway sector is joining its resources in a coordinated effort, creating a PPP (Public Private Partnership) which will steer research & innovation for really breakthrough results. Such common initiative, which follows some years of preparation work coordinated by UNIFE, is named Shift2Rail.



Figure 8: Horizon2020 Section

Shift2Rail

Shift2Rail is a JU (Joint Undertaking) putting together resources from the European Commission (with funds coming from Horizon 2020) and from main railway stakeholders (Founding Members and Associated Members), for a total budget of € 940 million, aimed at steering research activities in the railway sector.

Shift2Rail will foster the introduction of better trains to the market (quieter, more comfortable, more dependable, etc.), which will operate on an innovative rail network infrastructure reliably from the first day of service introduction, at a lower life-cycle cost, with more capacity to cope with growing passenger and freight mobility demand. All this will be developed by European companies, thereby increasing their competitiveness in the global marketplace.

Shift2Rail is organized according to five Innovation Programmes (IP), addressing the main railway challenges in specific areas (Rolling Stock, Control & Command, Infrastructure, IT services and Freight) and five Cross-Cutting activities, addressing topics which have a transversal impact on all areas.

Specifically, IP2 addresses the subject of **Advanced Traffic Management and Control Systems**



Figure 9: Shift2Rail Section

IP2

Taking the high-level objectives set out in the Shift2Rail Master Plan as a starting point, and considering the potential of ERTMS to offer increased functionalities and become even more competitive, the high-level objectives for IP2 can be summarized as follows:

1. Enhance overall line capacity throughout a better use of infrastructure by operating more trains on the same line and with a more flexible use of the vehicles on the line.
2. Contribute to railway system life-cycle cost reduction throughout a reduction in the capital cost of signalling and telecom infrastructures, maintenance costs and the consumption of energy.
3. Increase of operational reliability fundamentally with the use of more reliable technologies and components as well as architectures more simples and suitable to continued operation in case of failure.
4. Maintain ERTMS as a basis for any evolution, extending the new signalling and traffic management system to all railway transportation segment.
5. Ensure continuity and backwards compatibility with the current signalling and supervision systems bust fostering the highest integration possible.

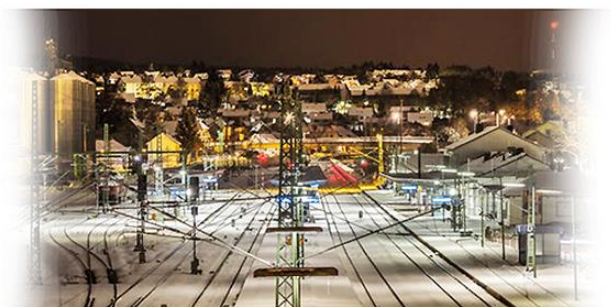


Figure 10: IP2 Section

Previous Projects

The figure below summarizes the most relevant research and innovation activities linked to the project that serves as a starting point for ETALON.

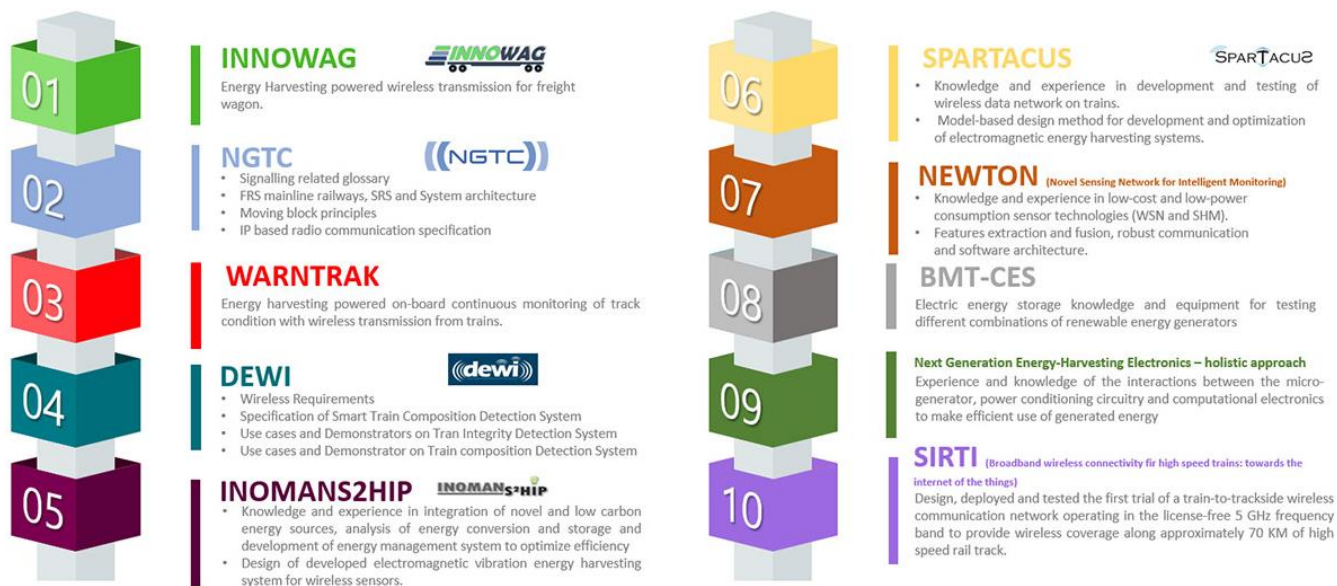
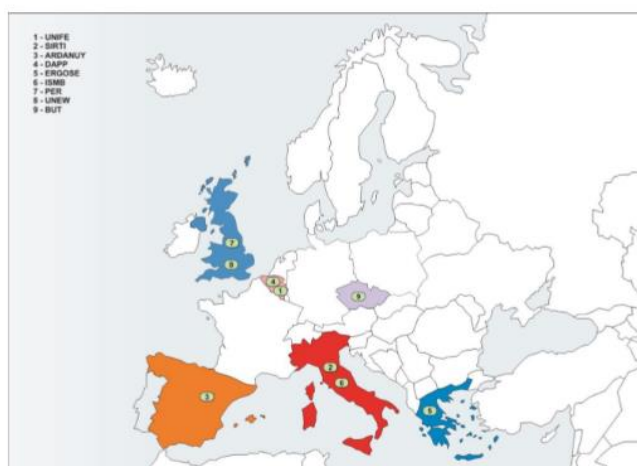


Figure 11: Previous Projects Section

2.6 PAGE: PARTNERS

The map in the upper part demonstrates the geographical coverage of the ETALON consortium. Below the page contains project partners' logos with links to their respective websites.

Partners



COORDINATOR



BENEFICIARIES



Figure 12: Partners Section

2.7 PAGE: RESULTS AND PUBLICATIONS

This page contains the list of the project deliverables. Those that are public and approved by the Consortium and the Shift2Rail-JU will be downloadable by clicking on the deliverable title. Similarly, the sub-section “Publications” will allow downloading the publicly available dissemination materials, documents and presentations.

2.8 PAGE: NEWS & EVENTS

The page contains the list of project news and information about related events. The section will be updated continuously throughout the lifetime of the project.



News



KOM (19 SEPT BRUSSELS)

ETALON (Energy Harvesting for Signalling and Communication Systems) project kick-off event was held on Tuesday, 19 September, in Brussels. The event gathered all the project consortium members and the coordinators of IP2 complementary projects (X2Rail1 and X2RAIL2).

Philippe Citroën, UNIFE Director General, welcomed the participants and emphasized the importance of ETALON project within Shift2Rail program. Etalon will contribute to the success of the program and their main objectives throughout the improvement of the state of the art of rail technologies.

Being the first physical meeting with all partners participation, the kick off meeting was dedicated to present the working plan and schedule of Etalon's work packages and to anticipate possible risks for the project. Due to IP2 complementary projects coordinators participation, a framework of collaboration was established fostering the cooperation between projects.

Contact: Jose Bertolin

Figure 13: News & Events Section

2.9 PAGE: CONTACTS

The users of the website will find here the direct contact information on how to reach the coordinator and how to get the information for which they may be interested in.

The embedded contact form is a convenient tool for contacting the project representatives without the necessity to use any other external communication tool (e.g. email client).

Contacts



Jose Bertolin
Project Coordinator

In order to send a message to the contact persons,
please fill in this form with your data.

Name *

Email *

Message *

Captcha *



I'm not a robot



reCAPTCHA

Privacy - Terms

Send

Figure 14: Contact Section