



Deliverable D5.4 Communication and Dissemination Plan

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Report contributors		
Name	Beneficiary Short Name	Details of contribution
Clive Roberts	UoB	First draft
George Bates	UoB	Graphic adjustment of tables and diagrams
Clive Roberts	UoB	Incorporation of comments from partners and revisions requested

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This project has received funding from the Shift2Rail Joint Undertaking (JU) under grant agreement No 826347. The JU receives support from the European Union's Horizon 2020 research and innovation programme and the Shift2Rail JU members other than the Union.

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1. Executive Summary

This document provides a plan for communication and dissemination of the knowledge gained during the Shift2Rail / European Commission Horizon 2020 project MOVINGRAIL, project reference 826347.

The University of Birmingham, as coordinator of Task 5.1 (dissemination coordination), will use a range of dissemination tools to promote the outcomes of the project. These will include soft and hard-copy materials, starting with a dedicated website, created and managed in accordance with requirements of Shift2Rail/H2020 and partners' branding requirements.

This dissemination plan sets out the ways in which we will inform and promote the findings of the project and the partners' expertise and capabilities. It identifies target audiences and the dissemination tools with which we plan to reach each audience. It also outlines opportunities for dissemination, such as key industry events (e.g. Innotrans 2020) where we will promote the project and its outcomes.

The plan will be reviewed and contributions/suggestions will be invited from the project's advisory board and other partners. The plan will be reviewed on a 6-monthly basis and amended when appropriate.

2. Introduction

This document provides a plan for communications and dissemination of the knowledge gained during the Shift2Rail / European Commission Horizon 2020 project MOVINGRAIL, Research and Innovation action reference 826347. In accordance with the Grant Agreement requirements, dissemination materials will reflect the authors' views and the Shift2Rail Joint Undertaking (JU) will not be responsible for any use that may be made of the information it contains.

Fundamental to dissemination activities will be the communication of the funding source of this project. All dissemination materials will:

- a) display the JU logo
- b) display the EU emblem and
- c) include the following text: "This project has received funding from the Shift2Rail Joint Undertaking (JU) under grant agreement No 826347. The JU receives support from the European Union's Horizon 2020 research and innovation programme and the Shift2Rail JU members other than the Union".

The use of the JU logo will comply with GA requirements, including location and display alongside other logo(s).

The purpose of dissemination is to communicate the outputs of the project among interested parties. This activity involves communication of the project's results to European railway Infrastructure Managers, Operators and signalling suppliers; regional and national policy makers; and the wider industrial and scientific community. This will be achieved through a range of activities, including a public website, social media, newsletters, conferences, publications and attendance at relevant events.

Dissemination and exploitation of results is crucial to the acceptance and implementation of technologies developed in the project by suppliers and end-users. This report describes the tasks planned in detail.

3. Background

Within the MOVINGRAIL project, research will be undertaken to build on existing European and national research projects (in particular, the projects X2Rail-1, ON-TIME, Capacity4Rail, and DESERVE) to bring together technologies and concepts that will significantly boost innovative and cost-efficient technologies and systems for railway signalling.

The MOVINGRAIL project will run alongside, and have interactions with, complementary Shift2Rail joint undertaking projects X2RAIL-1, X2RAIL-3 and CONNECTA-2. Part of the work, including communication and dissemination activities, in the MOVINGRAIL project will be performed in collaboration with the above three projects. Further, the outputs of the MOVINGRAIL project will feed into Shift2Rail TD2.3 - Moving Block and D2.8 - Virtual Coupling.

The following objectives of the project will be focussed on to help overcome existing barriers to innovation and introduce innovative methods, technological solutions and validation processes to Moving Block and Virtual Coupling.

Objective 1. Define a strategy and methods for **testing of Moving Block** signalling systems, including the trade-off between laboratory testing and on-site testing.

Objective 2. Evaluate the **Moving Block Operational and Engineering Rules**, highlight differences from traditional signalling systems, and give recommendations that might result in easier application of Moving Block signalling systems or their evolution to a different traffic management approach.

Objective 3. Identify the **potential markets** of the Virtual Coupling concept, including Main Lines, High Speed Lines, Urban/Suburban, Regional Lines, and Freight, considering future mobility and transport concepts and needs.

Objective 4. Provide a **cost-effectiveness analysis** (CEA) assessing the potential benefits of Virtual Coupling from the point of view of an Operator, highlighting pros/cons in terms of performance compared with traditional fixed-block and moving-block train separation systems. Performance indicators include capacity improvement, passenger increase, capital expenditure (CAPEX) reduction, and operational expenditure (OPEX) reduction.

Objective 5. Provide a **roadmap** for the introduction of Virtual Coupling to each of the identified markets, focusing on the main business and market actions deemed necessary to foster the application of Virtual Coupling.

Objective 5. Provide a **Risk Analysis** in terms of business for each of the identified markets due to the introduction of Virtual Coupling, including identification of the potential risks and the related actions, suggestions, and mitigations to overcome the potential obstacle and achieve the objective.

Objective 6. Analyse the **Train-to-Train radio communication** infrastructures wayside and on-board, including an assessment of the communication technology already achieved in TD1.2 (Train Control and Monitoring System) and the needs and the technology already achieved in TD2.1 (Adaptable Communications) in terms of real-time domain, throughput, reliability, availability, cost, and applicability to the specific domain.

Objective 7. Propose the **most suitable communication structure** for Virtual Coupling with evidence of the goodness of the choice using a theoretic but rigorous approach.

Objective 8. Investigate the application, solutions and dynamics of **automated car driving** and evaluate the applicability to the railway field.

The work of Objective 1 will be performed in collaboration with X2RAIL-1 project. Objective 6 will be performed in cooperation with the complementary project CONNECTA-2 and at the same time find convergence points with the needs and the technology already achieved in TD2.1 on adaptable communications in relation with the requirements that will be defined by the complementary project X2RAIL-3. Objective 7 provides an in-depth study for demonstrating the real effectiveness of the solution with regards the compliancy of the requirements that will be defined by the complementation project CONNECTA-2. Moreover, Objective 7 will be done in close coordination with the respective IP Coordinators of IP1 (Cost-effective and reliable trains) and IP2 (Advanced traffic management and train control systems) to guarantee convergence of technical communication solutions.

Throughout the project, the WP5 dissemination, communication and exploitation team will champion dissemination of information and interaction with the complementary projects within Shift2Rail, particularly for the purpose of ensuring future exploitation. The widespread and targeted dissemination of project outputs is vital to the acceptance and implementation of the technologies developed. General dissemination activities will include:

1. The inclusion of project results on the partners' web sites and internal newsletters;
2. Presentation of the results on the project website, which has links back to the partners' websites;
3. Publication of project results in technical papers, trade journals and conferences.
4. Initial dissemination of information through a project brochure to relevant associations and organisations;
5. Attendance and dissemination at industry trade events (e.g. Innotrans) and conferences;
6. The publication of case studies (demonstration scenarios) resulting from the project;
7. Exploitation of other online communication tools, e.g. social media, contribution to blogs, to reach appropriate audiences.

Through both formal and informal route, the WP5 team will endeavour to develop links and engage in knowledge exchange with other Shift2Rail and national and international projects.

3.1. Engaging Outside Organisations

At a high level, the Shift2Rail IP2 Steering Board has a role to ensure that the MOVINGRAIL project is performing according to the Multi-Annual Action Plan and contractual agreements. Therefore it is important to have an open and informative dialog with the IP2 management team and Shift2Rail Project Officer.

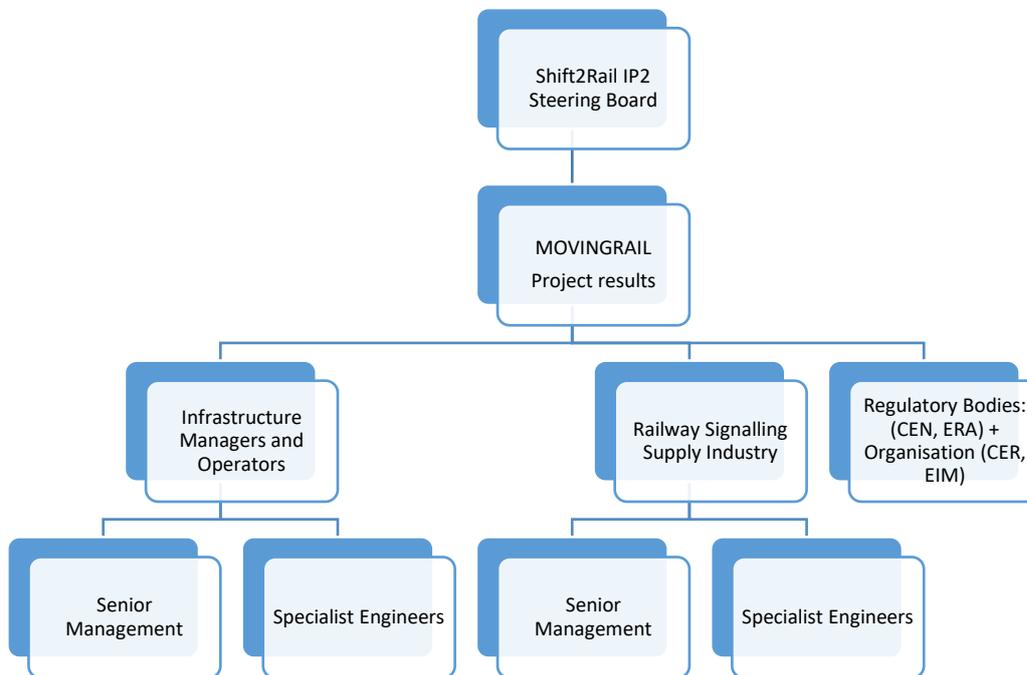


Figure 1: Overview of the MOVINGRAIL target groups

During the time of the project, the target groups will be addressed in different ways, for example via the project website and social media streams, as well as at conferences and seminars. However, the main means of communication with the targeted groups is mainly the deliverables and technical guidelines. Information will be presented to the senior management and specialist engineers in both the infrastructure management and railway undertaking companies.

4. Dissemination

The dissemination activities will be aimed at the target audiences and will include:

- Development and maintenance of a public website for control and distribution between project partners and public;
- Establishment of active social media streams and content: Twitter, LinkedIn;
- Preparation of flyers, newsletters and press releases and other relevant publications that can be also uploaded on the public website and distributed via social media;
- Organisation of workshops and contributions to conferences;
- Participation in relevant meetings and trade events to present the project's progress and results at EU level.

Dissemination of the project's non-confidential technical findings will occur at three levels:

1. At the first level, the consortium will disseminate the main findings to the Shift2Rail consortium, and the broader railway industry including the relevant standardisation boards of CENELEC. External organisations, such as UIC, UNIFE, ERA, who have access to companies who are associated with railway signalling will be engaged to ensure the results of the project are disseminated as widely as possible.
2. Secondly the consortium will publish and present the main technical findings of the project to relevant science journals and proceedings of international conference and workshops.
3. At the third level, the MOVINGRAIL project team will disseminate the project's results to the rail industry and general public through the project's website, social media feeds, newsletters and where relevant through press releases.

4.1. Target audiences

Audiences which will have an interest in this project include:

- Researchers in industry and academia – in project teams' own institutions
- Researchers in industry and academia – in other institutions
- Rail industry businesses
- Regional authorities
- Policymakers at regional, national and EU-level
- General public

The outcomes and knowledge which this project will generate will have relevance across these audiences in different ways. We anticipate each audience type will be interested in themes and project outputs in the following manner:

Audience	Themes of interest	Dissemination tools
Academic and industrial researchers	Technical and scientific objectives listed above	Academic papers (scientific journals) Workshops, conferences
Rail industry business	Application of project outcomes	Website Newsletters, flyers Trade events Workshops, conferences Press releases, blogs Focussed news/emails Social media (twitter, LinkedIn feeds)
Regional authorities	Impact of potential application of project outcomes	Website Press releases, blogs Newsletters, flyers Trade events Workshops, conferences
Policymakers	Impact of potential application of project outcomes	Website Workshops, conferences Social media (twitter, LinkedIn feeds) Newsletters
General public	Information Impact of potential application of project outcomes	Social media (twitter) Press releases Website

Table 1: Audiences and themes of interest

4.2. Dissemination Schedule

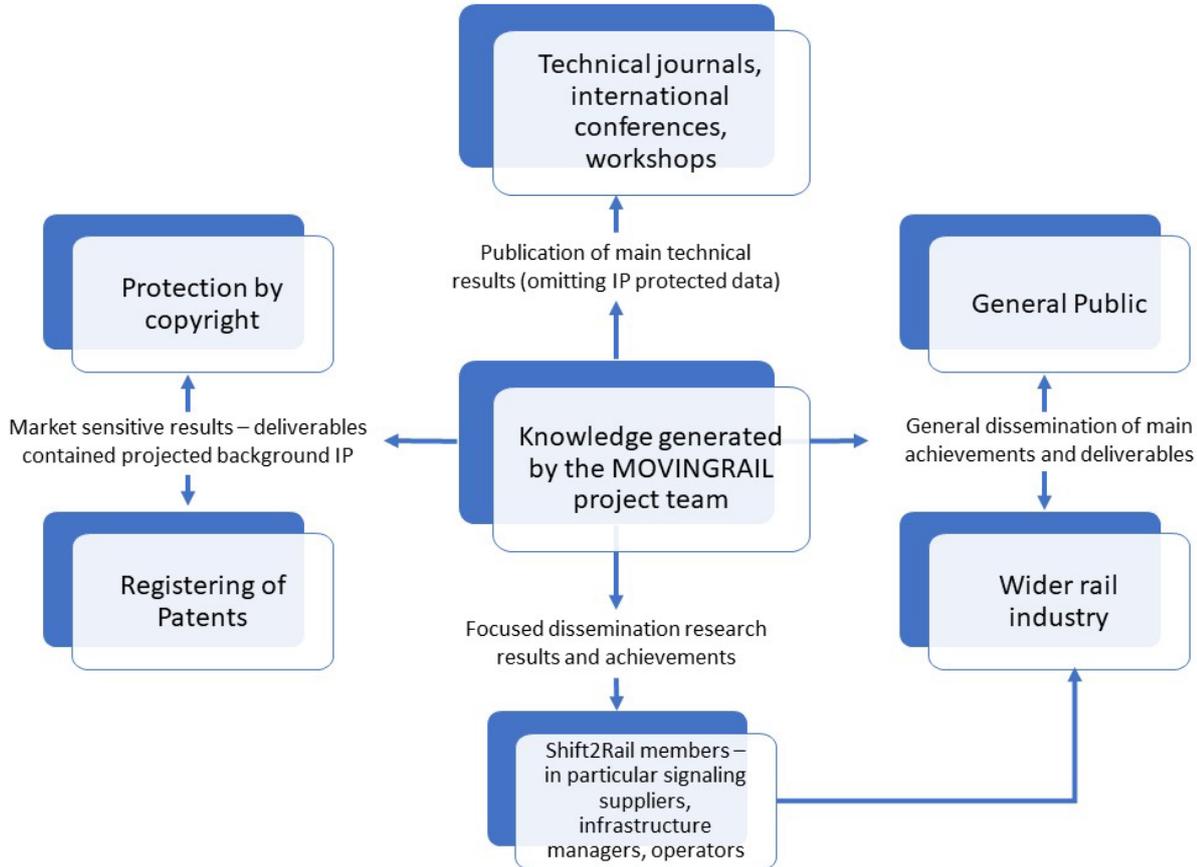


Figure 2: Overview of the MOVINGRAIL dissemination plan

The dissemination schedule, which will be updated every 6 months throughout the project, contains details of prior and planned dissemination events together with the responsible partner(s). Within the review process the WP5 team will consult the project’s advisory board and elicit feedback. The plan will also be discussed by the wider project team and any required changes will be implemented accordingly.

The following table outlines activities and responsibilities which make up the dissemination plan:

Planned Date	Type	Description	Audience	Reach	Partner(s) Responsible
March 2019	Website	Setting up of a project website	General	Worldwide (100+/month)	TUD
April 2019	Social Media Feeds	Establishment of social media feeds (Twitter and LinkedIn)	General	Worldwide (100+/month)	UoB
April 2019	Flyer	Flyer to be developed	Railway industry and research	Worldwide (100)	UoB
May 2019	Workshop	Workshop on Moving- Block testing requirements and market potentials of Virtual Coupling (London)	Technical experts	European (~60)	UoB/TUD
June 2019	Paper and Presentation	IAROR conference	Railway industry and research	Worldwide (100)	Academic partners
October 2019	Paper and presentation	IRSE ASPECT 2019 conference	Railway signalling industry and research	Worldwide (200)	TUD
Spring 2020	Magazine article	European Railway Review	Railway industry and research	Worldwide (5000)	UoB
April 2020	Paper and Presentation	Papers to be presented at TRA conference	Railway industry and research	Worldwide (100)	Academic partners
June 2020	Seminar on Moving Block testing strategies and Virtual Coupling performance	Presentation of the main results of MOVINGRAIL on testing methods for moving-block signalling as well	Students, research and railway Industry	European	TUD/UoB

	analysis	as technologies and operational performance of Virtual Coupling			
Sept 2020	Presentation and demonstration	Initial presentation to be shown at Innotrans 2020	Railway industry and research	Worldwide (100)	UoB
October 2020	Paper and Presentation	Presentation of project academic outcomes at International Conference on Intelligent Rail Transportation 2020	Railway industry and research	Worldwide (100)	Academic partners
Winter 2020	Final dissemination event	Papers and conference	Railway industry and research	Worldwide (100)	All partners

Table 2: Dissemination schedule

5. Conclusion

The WP5 team have begun to make clear plans in the areas of communication and dissemination, exploitation and training. A website has been designed and social media presence on Twitter (@MOVINGRAIL) has been established. A series of dissemination events have been planned, and it is anticipated that more opportunities will arise as the project progresses. The effectiveness of dissemination activities and the detailed plan will be reviewed on a regular basis, and be updated at least every 6 months.