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# Deliverable D5.4
# Communication and Dissemination Plan

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# 0. Executive Summary

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

# 1. Introduction

This document provides a plan for communications and dissemination of the knowledge gained during the Shift2Rail / European Commission Horizon 2020 project MOVINGRAIL. The aim of dissemination is to spread 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, as well as the wider industrial and scientific community. This will be achieved through a public website, social media, 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.

## 1.1. 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 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 complimentary 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.

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.

## 1.2. Engaging Outside Organisations

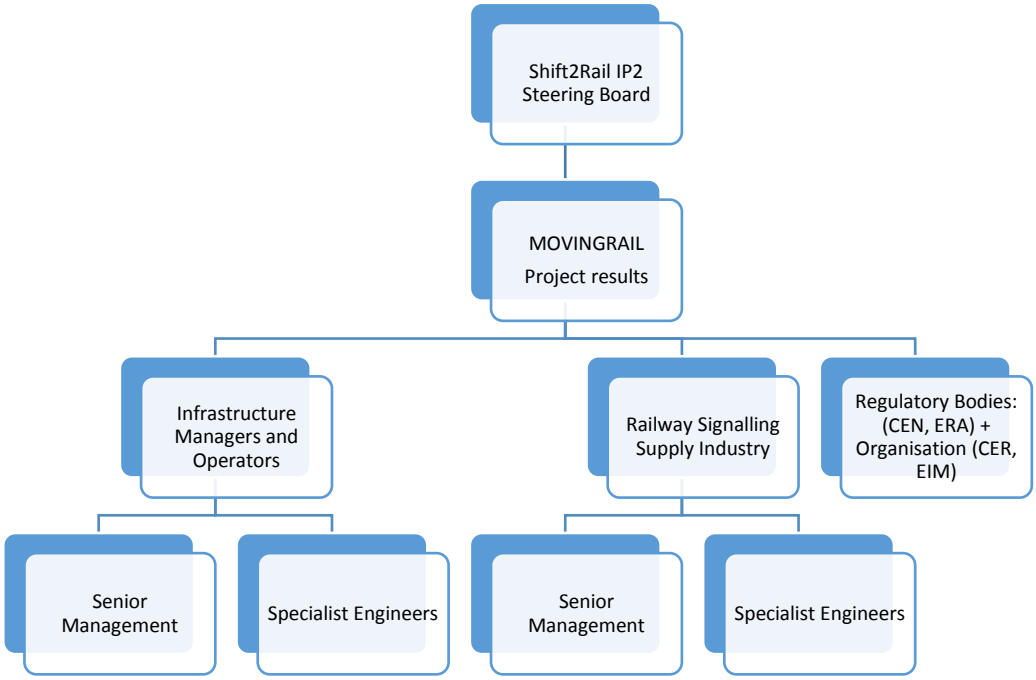


*Figure 1: Overview of the MOVINGRAIL target groups*

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.
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.

## 2. Dissemination

The dissemination activities 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:

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.

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.

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.

The schematic of Figure 2 shows the general plan to be adopted for the dissemination of the key findings.

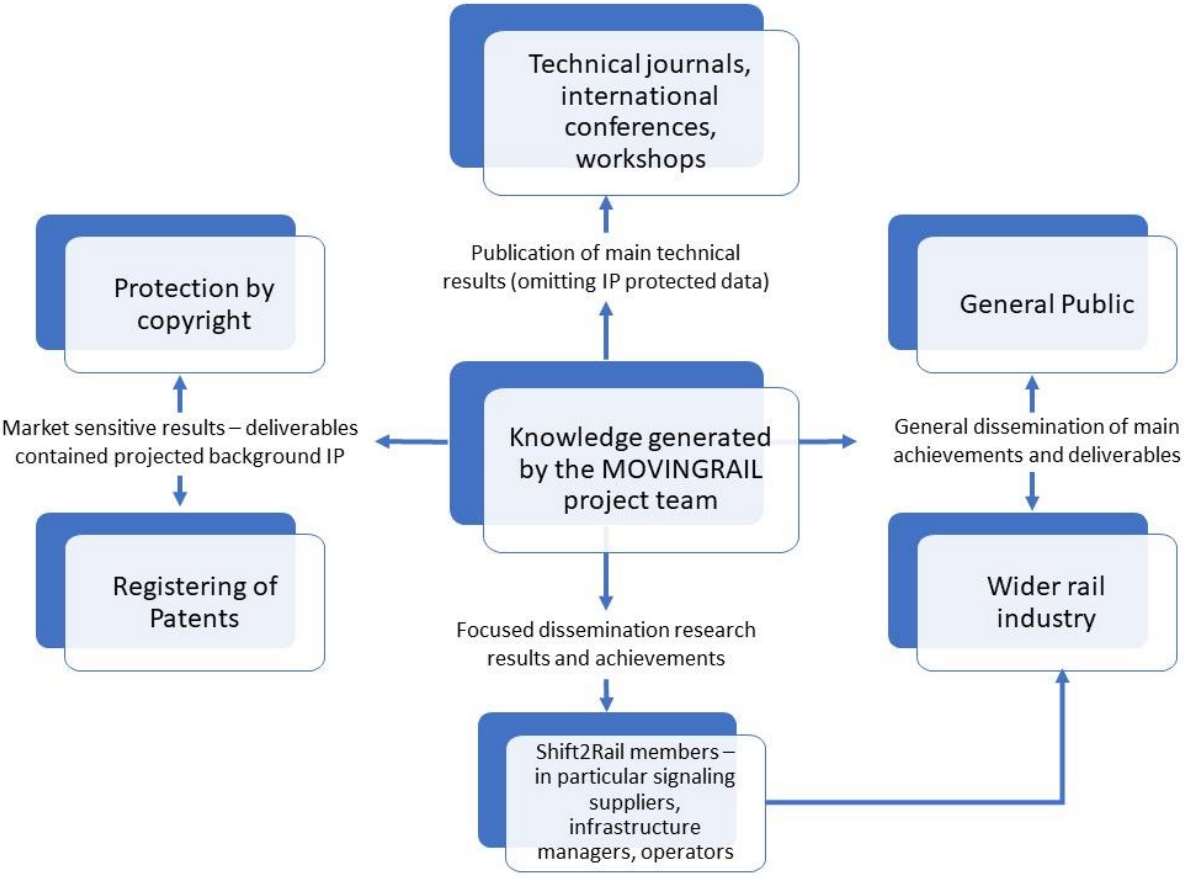


*Figure 2: Overview of the MOVINGRAIL dissemination plan*

## 2.1. Dissemination Schedule

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).

| 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 |

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| **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 analysis | Presentation of the main results of MOVINGRAIL on testing methods for moving-block signalling as well as technologies and operational performance of Virtual Coupling | Students, research and railway Industry | European | TUD/UoB |
| **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 | Railway industry and research | Worldwide (100) | Academic partners |

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| | | Transportation 2020 | | | |
| **Winter 2020** | Final dissemination event | Papers and conference | Railway industry and research | Worldwide (100) | All partners |

*Table 1 – Dissemination schedule*

## 3. Conclusions

The WP5 team have begun to make clear plans in the areas of communication and dissemination, exploitation and training. A series of dissemination events have been planned, and it is anticipated that more opportunities will arise as the project progresses. The plan will be reviewed on a regular basis, and be updated at least every 6 months.