Deliverable D5.3
Website

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Responsible/Author:	Eva Spoor (TUD) / Henry Varga (TUD)
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Document history		
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0.1	29/03/2019	First draft website
	02/04/2019	First draft deliverable
0.2	03/04/2019	Second draft
0.3	01/07/2019	Third draft
0.4	09/01/2020	Revision after EC deliverable rejection

Report contributors		
Name	*Beneficiary Short Name*	*Details of contribution*
George Bates	UoB	Design and lay-out website, social media
Eva Spoor	TUD	Coordinating design, hosting, content pages
Rob Goverde	TUD	Input design and text
Martin Scheidt	TUBS	Glossary page on website
Eva Spoor	TUD	Finalize hosting and deliverable report
Henry Varga	TUD	Website content management support and revision of deliverable report
Rob Goverde	TUD	Final check and corrections

Information on funding (Grant Agreement Art.29.4)

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.

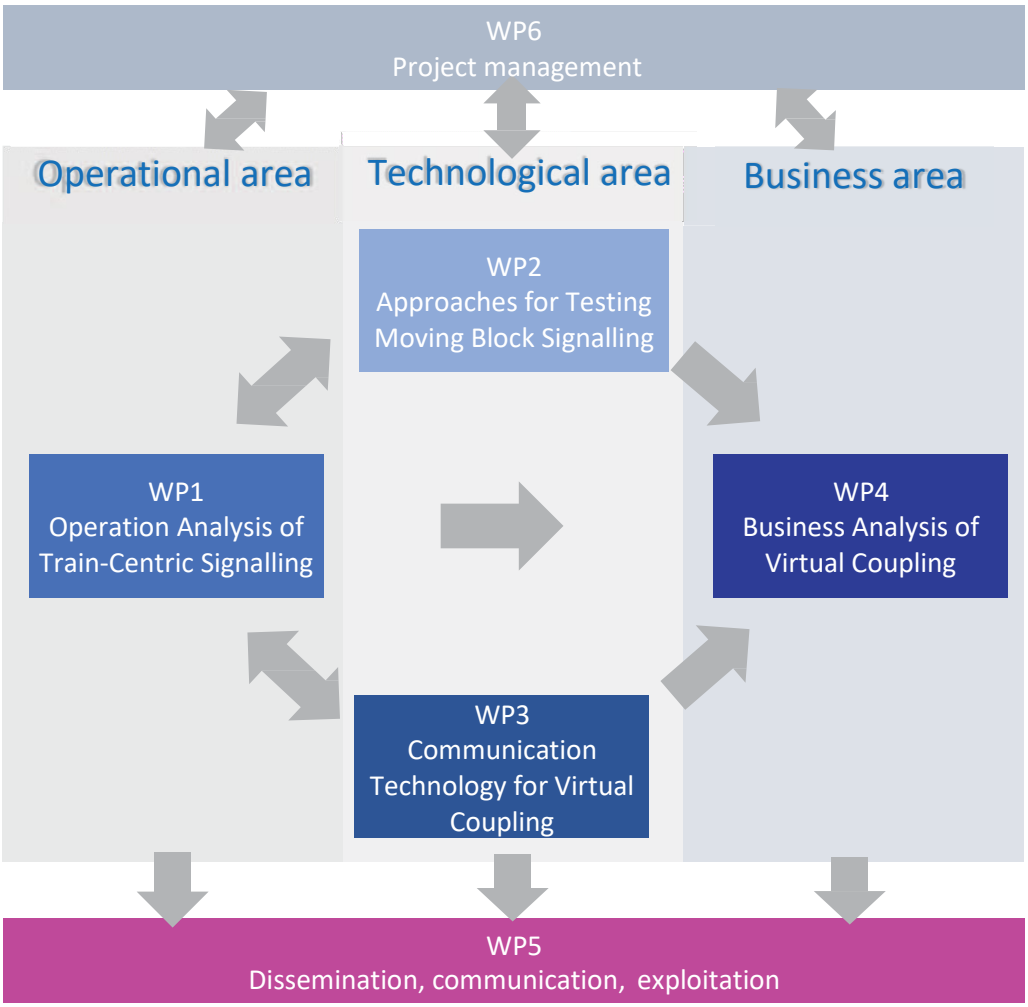
Contents

1. Executive Summary

The website is part of Work Package 5 (WP5), out of six. This document describes the general content of the MOVINGRAIL website on www.movingrail.eu. The website consists of an overview and project structure, partner information, public information (glossary and deliverables), operational/ technological/ business news and a contact page.

2. The MOVINGRAIL Website

The development of the website is part of WP 5 – *Dissemination, Communication and Exploitation* and took place under the lead of TU Delft under *Task 5.3 Website* and delivered as a deliverable *D5.3 Website*. The website is part of the dissemination coordination task and will support public access of public information, results and final deliverables about MOVINGRAIL. A communications and dissemination plan (D 5.4) will be developed for sharing the knowledge gained in the MOVINGRAIL project, for which the website will play an important part.



2.1. Objectives

The objectives of the website is to develop a public interfaces for the project (including the web pages) to support the consortium communications for:

- Raising awareness among European stakeholders;
- Establishing and maintaining links with external bodies including other EU-funded projects such as related Shift2Rail projects.

2.2. Hosting

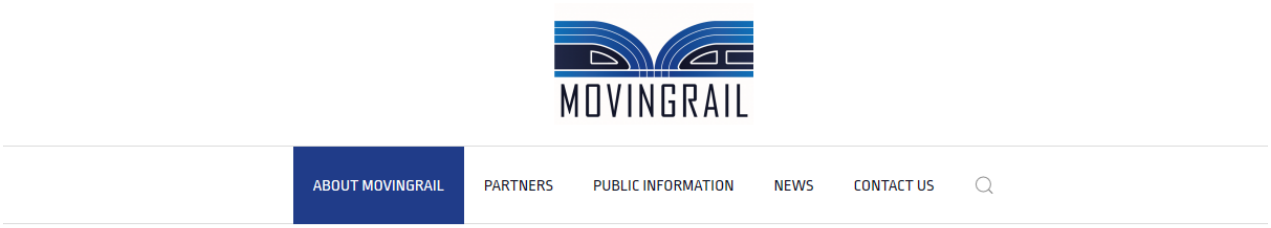
Hosting of the website is taken care of by Hosting XXL and is paid by TU Delft during the project. If the website is still needed after the project TU Delft will have to continue to pay for hosting. The website can be transferred after the project (as a static website, no changes possible) to the internal TU Delft web environment.

3. The structure of the website

The project website contains a project description, the objectives and ambitions, the project structure, the partners, and downloadable public deliverables, documents and leaflets. Moreover, the website will contain a blog and news about the progress of the project containing posts in accordance to the deliverables and events. Also, a video clip for the introduction of the project and a clip for lessons learned will be produced for a wider and general audience.
The website is structured in the following way:

- About MOVINGRAIL
- Partners
- Public Information
    - Glossary of Railway Operation
    - Deliverables
- News
    - All news
    - Operational
    - Technological
    - Business
- Contact Us

3.1. ABOUT MOVINGRAIL



ABOUT MOVINGRAIL

THE PROJECT WILL ASSESS OPERATIONAL PROCEDURES AND ADVANCED TESTING METHODS FOR ETCS LEVEL 3 MOVING BLOCK SIGNALLING, AS WELL AS COMMUNICATION TECHNOLOGIES AND MARKET POTENTIAL OF VIRTUAL COUPLING.

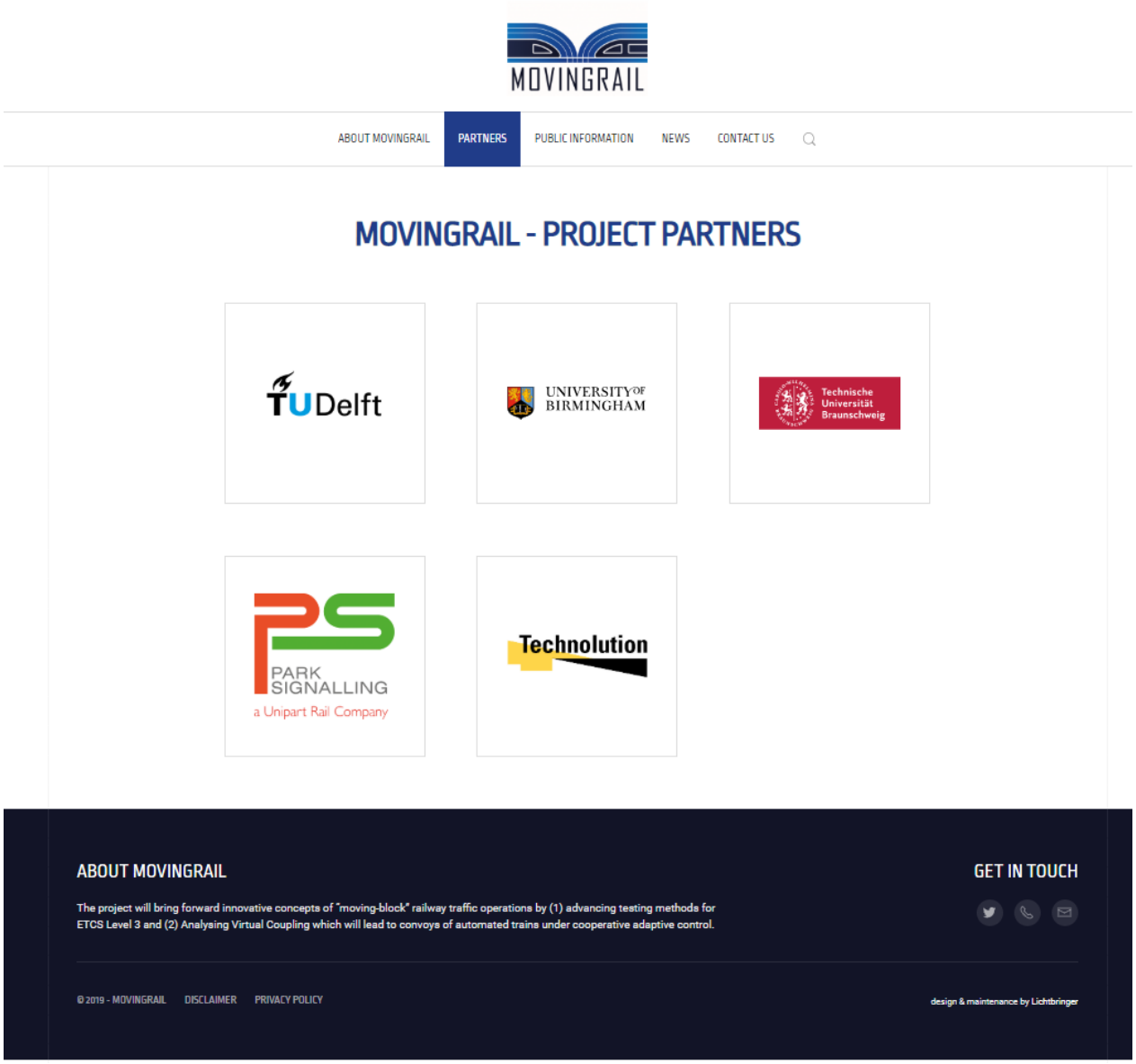
The project will analyse the application of Moving Block and Virtual Coupling signalling considered as the most promising technologies for increasing line capacity and reducing wayside life-cycle costs. The two concepts are in a different stage with Moving Block being an established standard in ERTMS/ETCS Level 3 and metro systems, while Virtual Coupling is still in the conceptual stage. Both signalling approaches are based on train-centric solutions using position information from the trains rather than train detection information from tracks. They differ in the fact that Moving Block allows train separation based on an absolute braking distance between trains, while Virtual Coupling enables a relative braking distance incorporating the braking behaviour of a leading train.

Within the MOVINGRAIL project, the carefully selected consortium members will build on existing European and national research projects to bring together technologies and concepts that will significantly boost innovative and cost-efficient technologies and systems for railway signalling. In order to develop the project, the consortium decomposed the high-level aims documented in the project Call and the technical ambition for the TD2.3 Moving Block and the D2.8 Virtual Coupling detailed in the Shift2Rail Multi-Annual Action Plan, to identify the key objectives that will help overcome existing barriers to innovation and introduce innovative methods, technological solutions and validation processes to Moving Block and Virtual Coupling. The key objectives are:

OBJECTIVE 1.

Identify **Operational procedures for Moving Block and Virtual Coupling signalling**, which ensure safe train separation, especially in particularly

3.2. MOVINGRAIL Partners



DELFT UNIVERSITY OF TECHNOLOGY

https://www.tudelft.nl/en/

ABOUT DELFT UNIVERSITY OF TECHNOLOGY

Founded in 1842, Delft University of Technology (TUD) is the oldest and largest university of technology in the Netherlands. With over 20,000 students and 2,500 staff members divided over eight faculties, it is an establishment of national importance and of significant international standing. The University collaborates on a structural basis with other international education and research institutes and has partnerships with governments, branch organizations, numerous consultancies, industry partners and companies from the small and medium business sectors. TUD ranks 54th in the QS World University Rankings 2018, and 4th in the field of Civil Engineering. In the field of Transportation Science & Technology TUD ranks 1st in the Shanghai Global Ranking 2017.

The Department of Transport and Planning (T&P) at the Faculty of Civil Engineering and Geosciences aims at fundamental research that contributes to a more efficient and robust design and reliable operation of transportation systems that meet mobility demands and respect scarce resources of land, environment and people. It is part of the mission to produce and disseminate new insights and tools to support transportation professionals (planners, authorities, infrastructure managers, transport and traffic operators). The research is predominantly knowledge-driven with a clear perspective to society-driven applications using a multidisciplinary approach. T&P was awarded the maximum score at all research assessments over the last 15 years. The department is an internationally oriented organization and participates in a large number of international networks and projects. T&P has a strong track record in railway traffic management and train control, automated (road) vehicles, and simulation. It includes the Digital Rail Traffic Lab which develops innovative concepts, models and methods for advanced digital railway traffic systems.

The Valorisation Centre (VC) at TUD supports, stimulates and facilitates scientists and supporting staff of the TU Delft in transforming results of research and technology developments to practical, commercially viable, applications. Within the VC Europeanproject management team professional project managers provide non-scientific project management for international collaborative projects. They support the scientific coordinators in a proactive, efficient and quality way, on financial, legal, administrative and organizational matters. The team's portfolio contains H2020, FP7, Europe Aid (with partners from Asia including UNEP and UNIDO) and Interregprojects.

ROLE IN THE PROJECT

TUD is the coordinator of the proposed project. Prof. Rob Goverde will be the scientific and technical coordinator. Eva Spoorfrom the Valorisation Centre of TUD will be project coordinator and will be responsible for the overall management of the project and financial reporting. In addition, two Associate Professors and a PhD student will work on the project. TUD will be responsible for the Business Case analysis of the Virtual Coupling concept, and participate in the evaluation of the Moving Block operational and engineering rules, the analysis of automated car driving technology and its applicability to the railway field, and simulation of the capacity impact of Moving Block and Virtual Coupling. The group has a strong track record in these areas as is reflected from the previous projects and publications.

ABOUT MOVINGRAIL | PARTNERS | PUBLIC INFORMATION | NEWS | CONTACT US

UNIVERSITY OF BIRMINGHAM

https://www.birmingham.ac.uk/

ABOUT UNIVERSITY OF BIRMINGHAM

The Birmingham Centre for Railway Research and Education (BCRRE) at the University of Birmingham is one of the leading European academic research groups in the rail domain. Drawing on a team of over 130 academic staff, researchers, and PhD students, the BCRRE is actively involved in a wide range of projects. These include work in the areas of: traffic management and optimisation, remote condition monitoring, non-destructive testing, systems engineering, data and information management, cyber security, energy and power, and aerodynamics and civils. The team actively engages with the industry, other universities, and a range of international partners in Europe, Asia, and America. The centre delivers two MSc postgraduate programmes in rail, and also offers an undergraduate programme. The centre has significant experience of undertaking collaborative research with industry through previous projects funded by agencies including the UK Department for Transport, the UK Rail Safety and Standards Board (RSSB), UK research councils, the European Commission and national stakeholders including train operating companies and InnovateUK.

The University of Birmingham has been involved in a number of previous European Commission projects, mainly working in the areas of railway operations and future signalling systems, and condition monitoring for both infrastructure and railway vehicles. Working in projects such as ON-TIME and CAPACITY4RAIL the university was involved in fundamental concepts for future railway operations, and the development and test of algorithms for real-time traffic management. These approaches have now been taken up by industry, and the university continues to work with a number of the original project partners to bring the approaches into practice. This area of research was expanded in IN2RAIL which also includes work on systems engineering as well as nowcasting andforecasting.

ROLE IN THE PROJECT

The University of Birmingham will lead Work Packages 2 and 5. Professor Clive Roberts will be the lead for Work Packages 2 and 5. Several Research Fellows and PhD students will also work on the project. They will be supervised by Professor Clive Roberts, Dr Lei Chen and Dr Gemma Nicholson.

TECHNISCHE UNIVERSITÄT BRAUNSCHWEIG

https://www.tu-braunschweig.de

ABOUT TECHNISCHE UNIVERSITÄT BRAUNSCHWEIG

Founded in 1745 the academic community of Technische Universität Braunschweig (TUBS) comprises some 20,000 students and 3,500 staff members. The academic focus is on engineering and natural sciences, closely linked with humanities, economics, social sciences and education. Technische Universität Braunschweig is part of TU9 German universities, and constantly ranking in the top five engineering schools in Germany.

The Institute of Railway Systems Engineering and Traffic Safety (IfEV) is part of the Fakultät Architektur, Bauingenieurwesen und Umweltwissenschaften (School for Architecture, Civil Engineering and Environmental Sciences). Founded in 1951, the institute has become known as a competent partner for central questions concerning railway engineering. The institute's primary fields of research are railway operation and railway safety technology. Both areas are central parts of the railway system and are very important when it comes to answering questions about safety, operational activities and capacity. In this spirit our key activities are operational practice and rules, operational requirement specification, operational security, and risk and safety analysis.

In our staff we have engineers who are specialized in civil engineering, transport engineering, electrical engineering and IT. They work together in industrial projects as well as in publicly aided research projects (DFG, BMBF, EU). Concerning its course program, the IfEV accommodates the closely intermeshed, multidisciplinary character of the railway system. That is why the range of IfEV's teaching is an important part of study courses like civil engineering, transport engineering, computer science and industrial engineering.

ROLE IN THE PROJECT

The Technische Universität Braunschweig is one participant of the proposed project. Prof. Dr. Jörn Pachl is the Head of the Institute of Railway Systems Engineering and Traffic Safety (IfEV) und will be the scientific and technical coordinator in this department. Two PhDs and one Post doc will work on the proposed project. They will be supervised by Prof. Dr. Jörn Pachl. TU Braunschweig will be responsible for dissemination, communication and exploitation of the project. According to the main expertise the institute will work on generic functions, operational and engineering rules and Capacity Impact of the Moving Block and the Virtual Coupling.

ABOUT MOVINGRAIL | PARTNERS | PUBLIC INFORMATION | NEWS | CONTACT US

PARK SIGNALLING

http://www.park-signalling.co.uk

ABOUT PARK SIGNALLING

Park Signalling is an SME delivering engineered solutions and consultancy for railway signalling and telecommunications. The Company formed in 2000 by key staff from the former Manchester office of Alstom Signalling. We have a core staff of 20 – predominately experienced engineers, specialist in their field. This is supplemented by a similar number of part-time associates that either provide additional resource and/or specialism, who contribute as dictated by requirements. We offer exceptional knowledge and vast experience, a pioneering approach to problem solving, an innovative design and development capability, coupled with an extensive range of products and services. We have carried out research leading to patent submissions and won RSSB innovation award. Park Signalling brings industrial experience to the analysis of the Virtual Coupling Communication Structures.

ROLE IN THE PROJECT

Park Signalling leads Work Package 3. They focus on the Virtual Coupling Communication Structure. The Park Signalling research team will be drawn from Principal Engineer Colin Exley, Senior Engineer John Marsden, Design Engineer Robin Lee and a Graduate Engineer. The Park Signalling Technical Steering group will consist of Consultant Dr Alan Cribbens, Product Safety Director William Redfern, and Engineering Director Mark Cooper. The group has sufficient experience as is reflected from previous projects and publications.

TECHNOLUTION

https://www.technolution.eu/

ABOUT TECHNOLUTION

As a technology integrator, Technolution realizes innovations for its clients. Technology that creates value for your business. We work with you to create the best solutions, from concept to valuable product or service. Development always starts with an innovative idea, either your own or one that we come up with together. In developing this idea, we make sure first that the corresponding business case is sound. Then we get down to work. We develop and realizethe

system or product using our technical expertise and our knowledge of your domain. Post- delivery we also offer maintenance and support and life cycle management. Ideas for improvement often flow from use, thus closing the loop. In this way we keep innovating together. Technolution deploys its multidisciplinary expertise in an effective way to find the best solution for you, whether this means developing electronics, programmable logic, (embedded) software or a combination of these things. Have a specific question or want to have a specific product developed? We can realize this for you as a project. Sometimes this involves 100% customization, but we use our building blocks wherever possible to create tailor-made solutions within a short time span. And we can offer you one of our products if your requirement doesn't involve customization.

Technolution has its base in Gouda in The Netherlands and subsidiaries in Denmark and Sweden. Subsidiaries with the intention the become sister companies of the Dutch branch. The company operates in the traffic and transport, public safety & security, (high-tech) industry and energy sectors. Clients are international organizations that engage them to apply new and existing technologies. MOVINGRAIL is in the heart of the traffic and transport and public safety & security businessunits.

Over the last decade Technolution has been active as partner and still is in a series of national and European R&D projects. A role and effort that is a prerequisite for the way Technolution designs and develops its technical solutions.

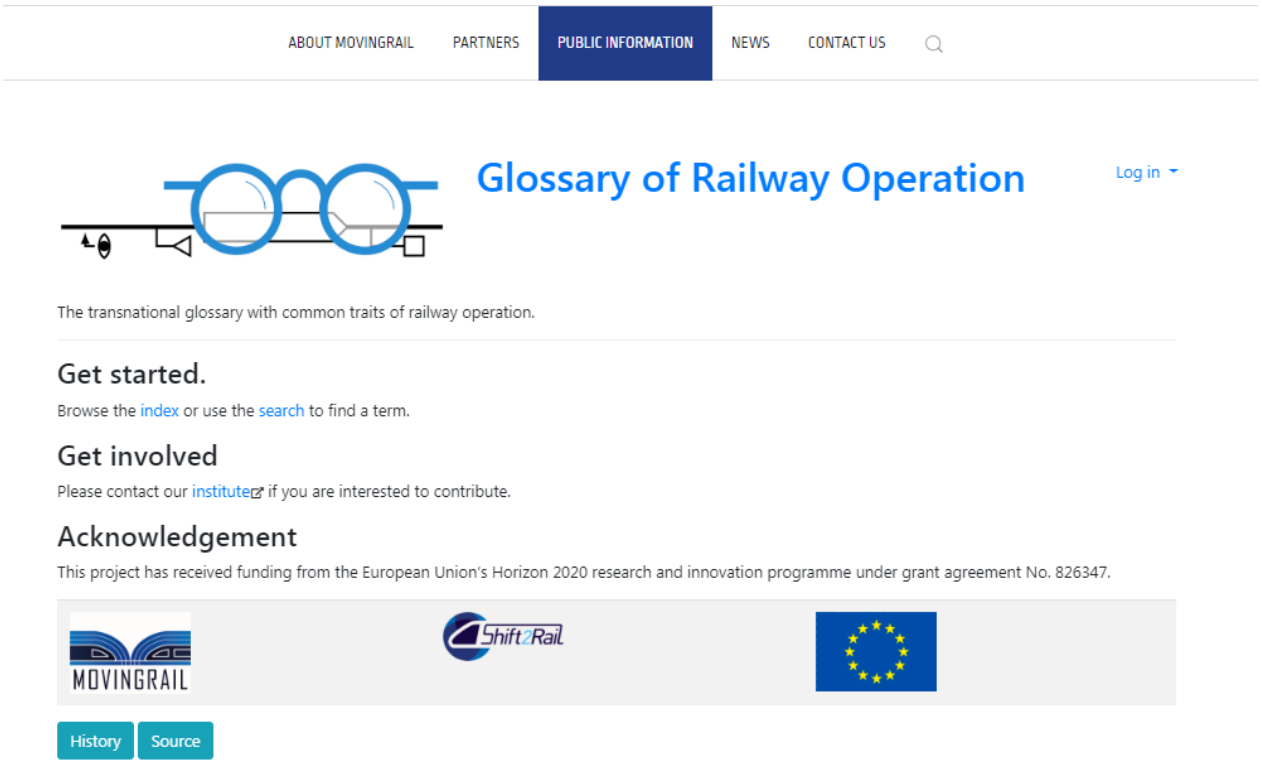
ROLE IN THE PROJECT

Technolution's main focus will be on identifying the relevant results and developments in the Automotive sector and translating them into possibilities for the rail and especially the concepts of moving blocks and virtual coupling. Technolution has sufficient experience in these areas as is reflected from the previous projects and publications. One of the developments Technolution has extensive knowledge about is the V2X (vehicle-to-vehicle and vehicle-to-infrastructure) communications, which is relevant for virtualcoupling.

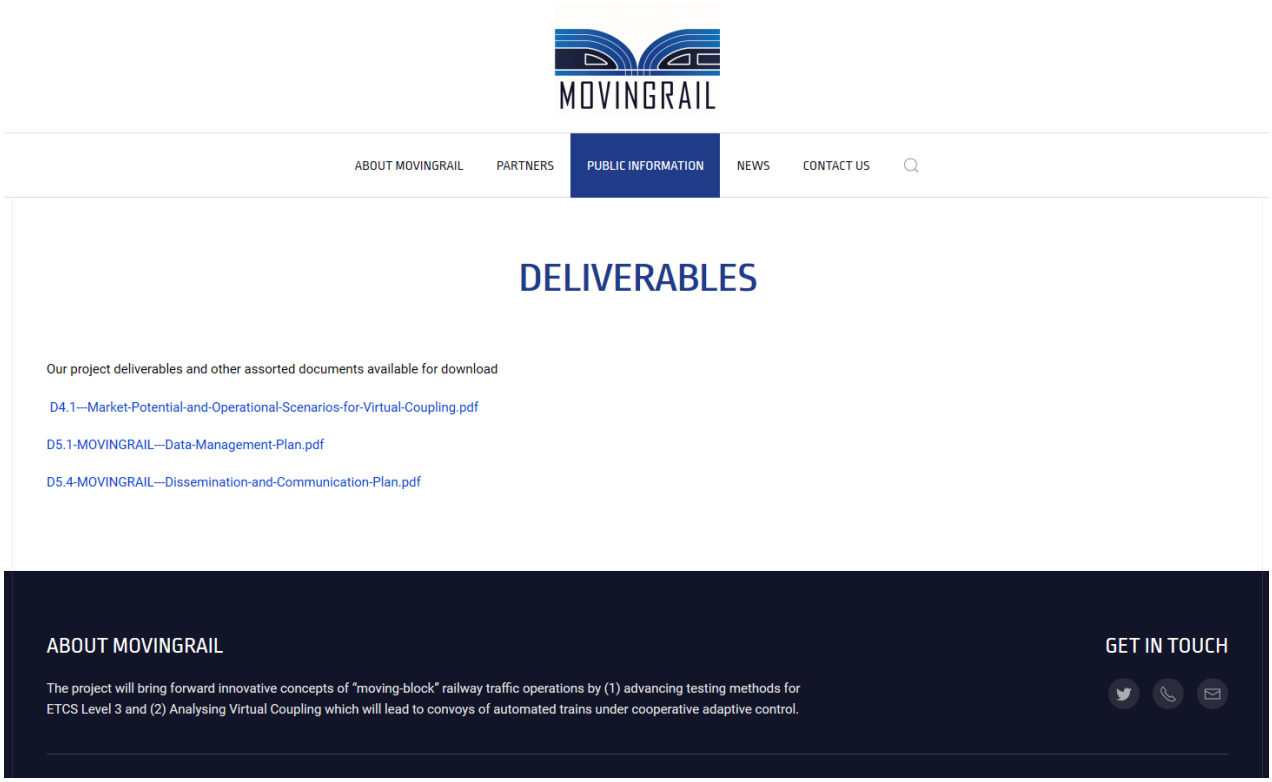
3.3. Public information

3.3.1. Public information – Glossary of Railway Operation

The MOVINGRAIL public information page offers a searchable glossary of railway operation an control. Furthermore, MOVINGRAIL public deliverables and other public results will be shared via this tab.

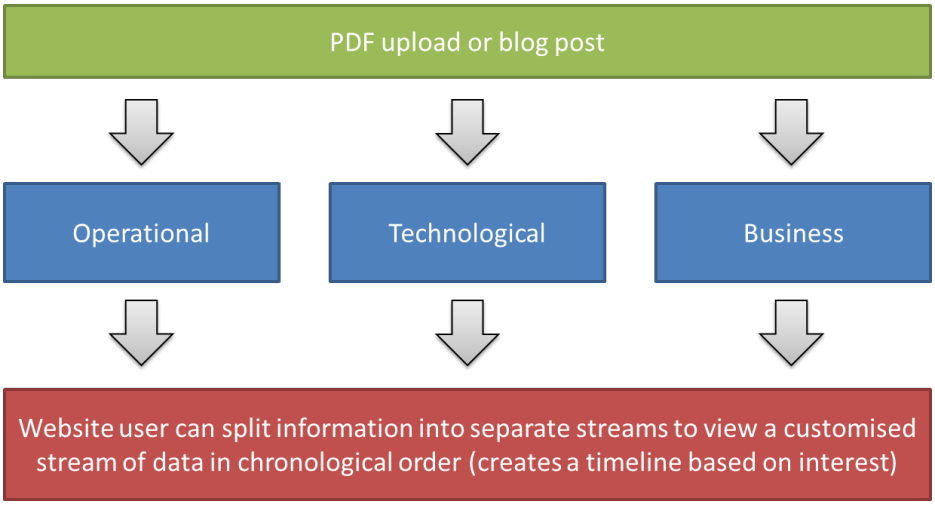


3.3.2. Public information - Deliverables

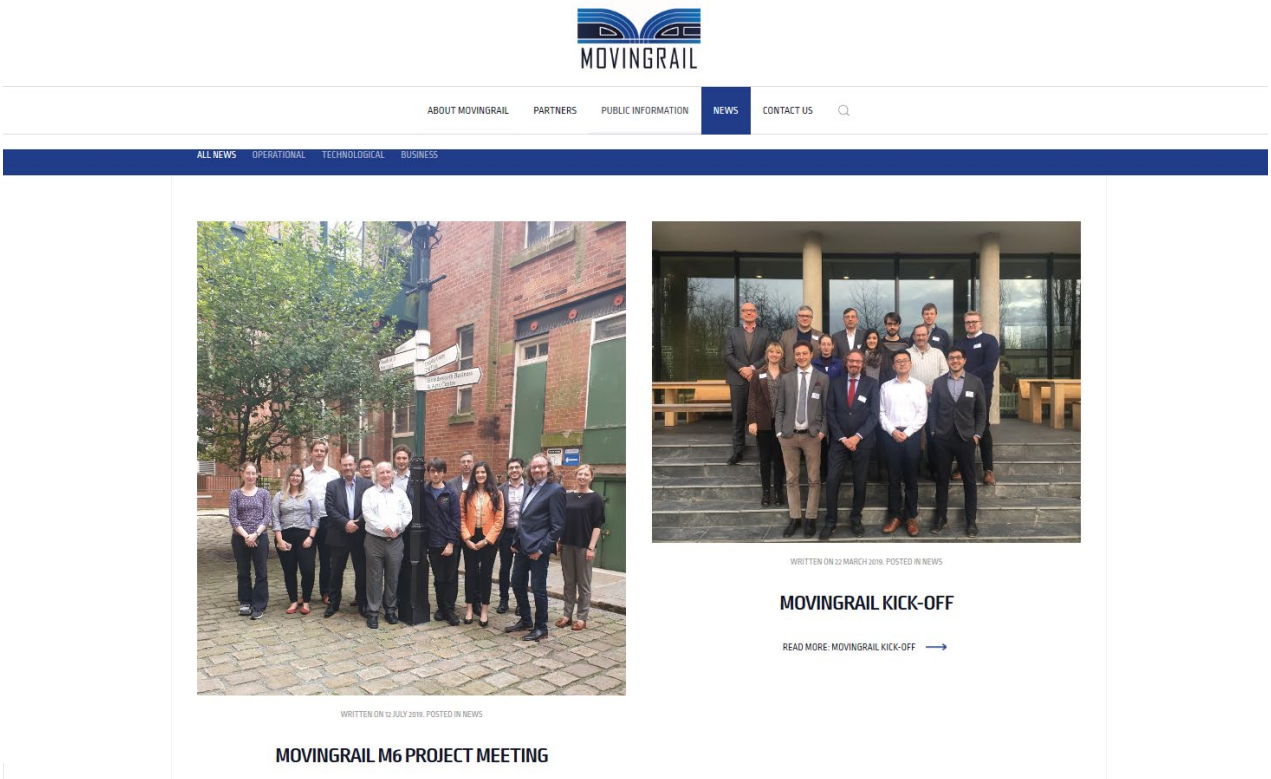


3.4. News

The news page website "flow" is as following:



3.4.1. News – All news



3.4.2. News – Operational

Currently, there are no separate articles in this category.

3.4.3. News –Technological

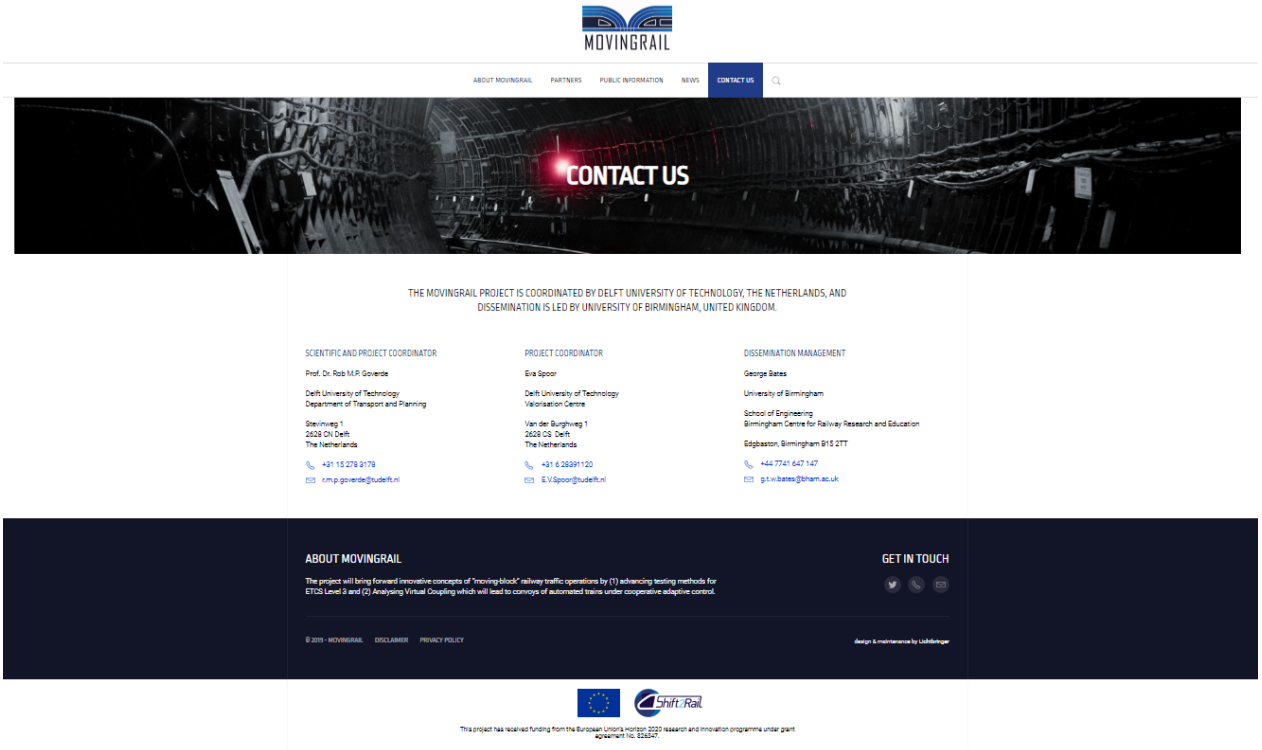
Currently, there are no separate articles in this category.

3.4.4. News – Business

Currently, there are no separate articles in this category.

3.5. Contact Us

The contact page includes the contact information for the scientific and project coordinator, operational project coordinator and dissemination manager.



4. Other

The website includes a search page and reference, disclaimer, privacy policy and twitter link are indicated below.