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Deliverable D 7.1

Dissemination and Communication Plan

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1. Executive Summary

This document has been prepared in order to provide a clear dissemination and exploitation strategy for the Shift2Rail funded project LOCATE (Locomotive bOgie Condition mAinTEenance), and to describe the tools that will be used to facilitate the wide-spread of information and knowledge from the results created by the project, among and beyond the members of the consortium (and beyond the life of the project).

In this deliverable, we will present materials and strategies for communicating and disseminating LOCATE objectives and results to railway stakeholders and the scientific community. Those include:

- The creation of a project identity;
- the creation of a public website and private working area;
- the use of social media;
- the creation of a project flyer;
- the regular publications/articles on the project objectives and achievements;
- the organisation of a final event;
- the participation to conferences and the publication of results in relevant journals;
- the creation of an advisory Board, and
- the publication of a final recommendation brochure.

Moreover, the dissemination and communication plan describes how LOCATE will interact with other Shift2Rail (S2R) projects and how the results will be transferred to the S2R Joint Undertaking (JU).

Throughout the project, the Dissemination Work Package (WP7) will drive the dissemination of information, particularly for the purpose of ensuring future exploitation and the collaboration with the other S2R projects. The widespread and targeted dissemination of the project outputs is vital to the acceptance and implementation of the technologies developed and for this reason all the other project partners are going to be involved in the production and publication of material like project flyer, articles, press releases, presentations and scientific publications.

The task leader of the work package 7 is UIC with the support of all partners.

This deliverable will be a dynamic document that will be revisited and edited periodically and will evolve with the project.

2. Abbreviations and acronyms

Abbreviation / Acronyms	Description
AB	Advisory Board
CFM	Call For Members
COMADEM	Condition Monitoring and Diagnostic Engineering Management
ECM	Entity in Charge of Maintenance
GA	Grant Agreement
IAVSD	International Association for Vehicle System Dynamics
IEEE	Institute of Electrical and Electronics Engineers
IP	Innovation Programme
IRJ	International Railway Journal
JRRT	Journal of Rail and Rapid Transit
LOCATE	Locomotive bOgie Condition mAinTEenance
RGCF	Revue Générale des Chemins de Fer
RTR	European Rail Technology Review
S2R JU	Shift2Rail Joint Undertaking
STC	Steering Committee
TD	Technology Demonstrator
TRA	The Transport Research Arena
UIC	Union Internationale des Chemins de fer
WCRR	World Congress on Railway Research
WP	Work Package

3. Background

LOCATE “Locomotive bOgie Condition mAinTenance” is a 24-month project, funded by the Shift2Rail JU under the European Union Horizon 2020 Research and innovation programme.

LOCATE project answers to the challenges identified in the Shift2Rail Open Call “S2R-OC-IP5-01-2019: Condition-based and preventive maintenance for locomotive bogie”. The call is inserted on Shift2Rail Innovation Programme 5 -IP5 “Technologies for Sustainable and Attractive European Rail Freight” of the Shift2Rail Master Plan, and it is related to the topics of Condition Based Monitoring for Predictive Maintenance, and maintenance in general. The project will also have relevant impact on Asset Control Tower and Customer Communication topic.

The Call is associated to the Technology Demonstrator – TD5.1.1 Condition Based Maintenance under TD5.1 Fleet Digitisation and Automation.

The present document “Dissemination and Communication Plan” - Deliverable D7.1 – is the first deliverable within Work Package 7 (Dissemination and exploitation) of the LOCATE project (Grant Agreement No. 881805).

WP7 involves three tasks, as follows:

- Task 7.1 - Project Promotion and Communication
- Task 7.2 - Project Exploitation
- Task 7.3 - Recommendations for new Standards

This report contributes to task 7.1.

4. Objective/Aim

The Shift2Rail funded project LOCATE (Locomotive bogie Condition mAINTenance) aims to provide the methods and tools by which every Entity in Charge of its Maintenance (ECM) to implement predictive maintenance of bogie, which is one of safety-critical component in a rail vehicle. The specific objectives are to:

- Ensure safety. The parts concerned are continuously under surveillance;
- Increase availability and reduce cost by avoiding unnecessary controls. Most checks do not result in repair or replacement. The data collected makes a continuous improvement of the maintenance process easier to implement;
- Increase reliability. Interventions are made before any problem in operation;
- Without impact on maintainability. The implementation of surveillance equipment will be done under the control of the people doing the maintenance.

The communication and dissemination approach is implemented at two different levels:

- internal, and
- external communication.

This document has been prepared in order to provide a clear dissemination and communication strategy for LOCATE, and to describe the tools that will be used to facilitate the wide-spread of information and knowledge from the results created by the project, among and beyond the members of the consortium (and beyond the life of the project).

Each of the project partners will be actively involved in the dissemination and exploitation activities. This document shall be regularly updated with the report on their activities and with the potential opportunities for publications, workshops, meetings and other types of events.

5. INTERNAL COMMUNICATION

5.1. Dedicated private workspaces

LOCATE partners will use two cooperation tools (member's areas) which access is reserved to project partners only.

The first one was created since inception of the project and is accessible on onedrive at: <https://onedrive.live.com/?authkey=%21AL%5Fk5Wv5p%2DB%5FQ74&id=B3399AE4E0831664%2142071&cid=B3399AE4E0831664>. Figure 2 below shows the structure of this working area.

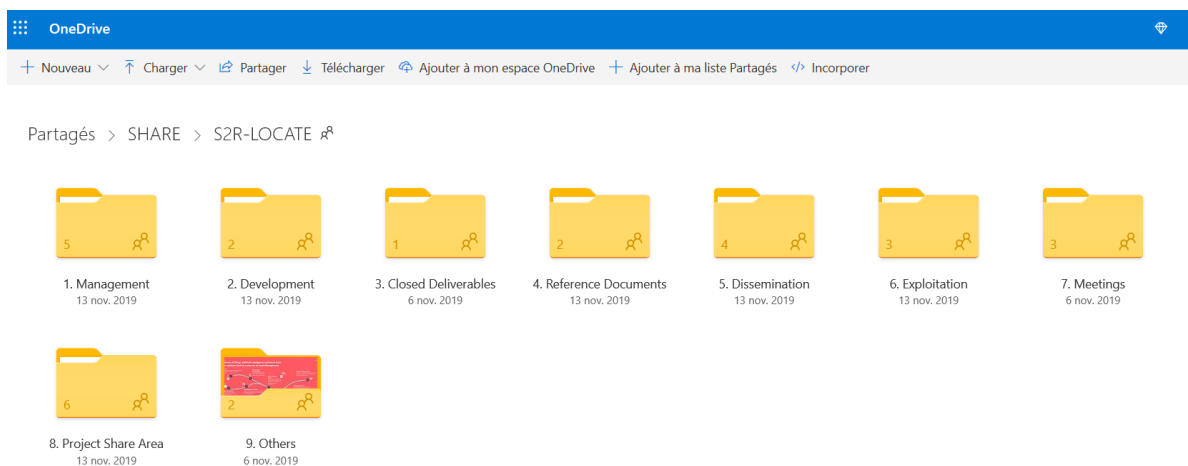


Figure 1 LOCATE Working area

The second one has just been created in the UIC collaborative Tool “OVIDENTIA” which is an open source content management and collaborative platform based on a large community of users. This Workspace enables users:

- to share and store documents
- to organise meetings
- to manage directories and contacts
- to discuss special issues online

This member's area will be mostly updated by the coordinator and the dissemination leader and will contain only final versions of all documents. The LOCATE workspace is accessible at <http://extranet.uic.org>. Figure 3 below shows the home page of the workspace with the latest documents and files uploaded. Figure 4 shows the structure of the current private workspace. This structure will be adapted when necessary.

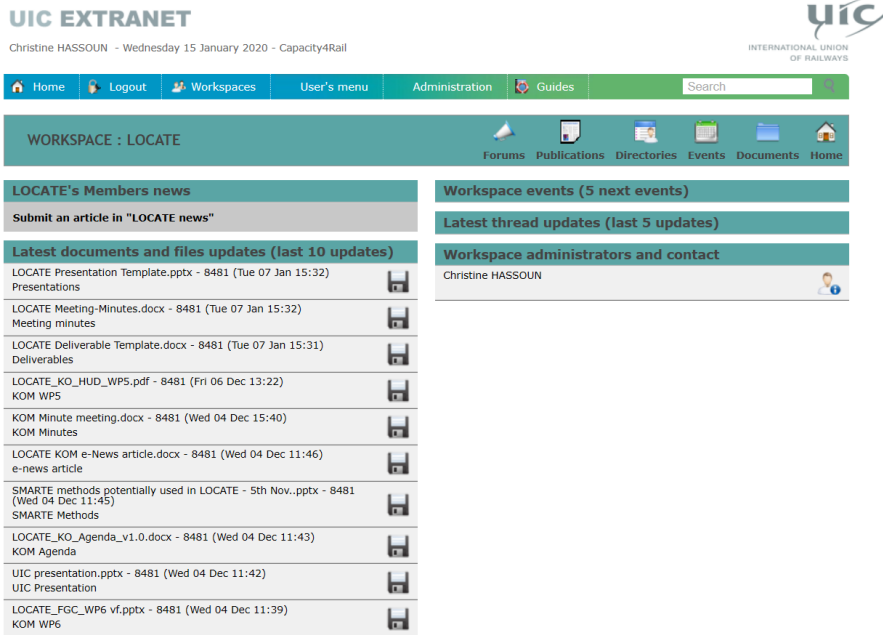


Figure 2 Homepage of the LOCATE private area

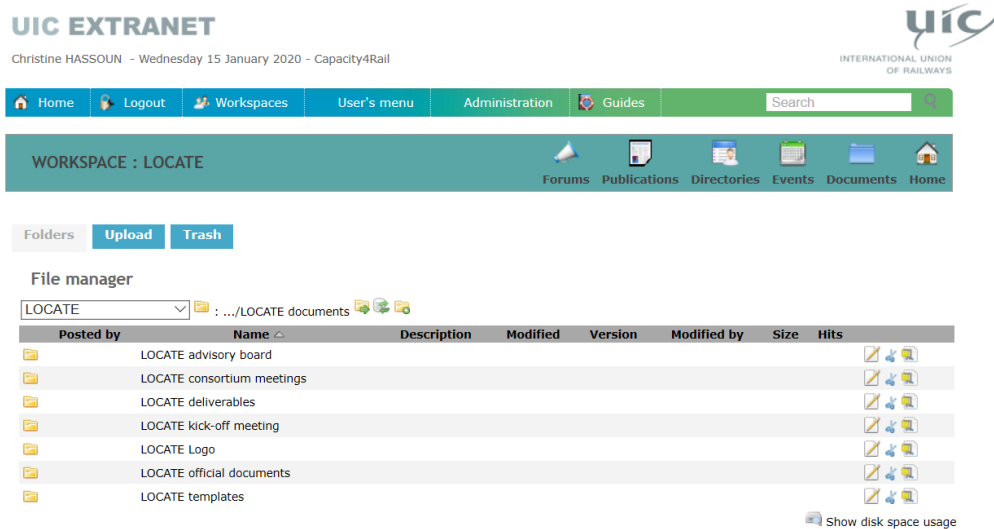


Figure 3 Structure of the LOCATE private area

5.2. LOCATE MAILING LIST

One mailing list for internal communications has been created for all members of the consortium. This list is available on the private working areas.

6. EXTERNAL COMMUNICATION AND DISSEMINATION ACTIVITIES

6.1. Target audience

Fundamental aspect of an effective dissemination strategy is the definition of the target group(s) to which the dissemination/communication activities have to be tailored.

The LOCATE consortium has identified the main stakeholders according to five categories:

- Railway undertakings
- Regulatory bodies
- Rolling stock manufacturers
- Technology providers
- Research community

Target Group	Project website	Social media	Events	Mailing	Leaflets	Press releases
Railway undertakings	✓	✓	✓	✓	✓	✓
Regulatory bodies			✓		✓	✓
Rolling stock manufacturers	✓	✓	✓		✓	✓
Technology providers	✓	✓	✓	✓	✓	✓
Research community	✓		✓	✓	✓	✓

Table 1 Dissemination and exploitation tools by project target group

6.2. Message/results to be disseminated

The primary objective of the LOCATE project is to develop a set of tools to assess the condition of freight locomotive bogies to implement a condition-based maintenance program. LOCATE aims at contributing to optimise the availability of rolling stock, the quality of service, maintenance costs and return on investment.

The table below summarises how LOCATE project can contribute to such topics.

Input to Vision	Project Contribution
Asset Control Tower & Customer Communication	
Locomotive	GPS Localisation of the Locomotive
	Locomotive Asset Condition Monitoring
	RAW data of sensors, can provide info of Rail Infrastructure Condition
Infrastructure	Sending Condition Based Data to Cloud Systems or Private Infrastructure for processing
Condition Monitoring for Predictive Maintenance	
Locomotive	Sensor for Condition Monitoring of the Bogie
	Integration of Data with OBU
	Knowledge Extraction for New Locomotives and Retrofit of existing ones to reduce LCC
Infrastructure	Backbone of wireless communications on the train
	Dynamic Maintenance Planning on Maintenance Shops
	Communication with Suppliers for parts delivery
	Condition Based Maintenance Regime

Table 2 LOCATE contribution to Shift2Rail vision

WP N°	Key messages to communicate	Railway undertakings	Regulatory bodies	Rolling stock manufacturers	Technology providers	Research community
WP2	Methods of analysis for predictive maintenance	✓	✓	✓		✓
WP3	Guideline to define physical parameters to be monitored	✓	✓	✓	✓	✓
WP4	Numerical model definition	✓		✓		✓
WP5	Guidelines for implementation of predictive maintenance	✓				
WP6	Guidelines for testing the predictive maintenance system	✓				
WP7	Market perspectives	✓	✓	✓	✓	✓

Table 3 Key messages to be communicated to project target groups

LOCATE project will innovate by:

- Contributing to a necessary industrial shift from preventive maintenance to predictive maintenance through digitalisation; achieving optimised condition-based maintenance strategies while developing dynamic tools that can easily assess the overall impacts in maintenance planning and railway operations, and open the path towards guaranteed asset health and availability;
- Providing innovative application of sensors to monitor structural integrity of critical and high cost components of the bogie, following a cost-effective and reliability-based optimisation of the sensor design. Achievements demonstrated on the freight locomotive bogie can be transposed to develop more intelligent passenger trains and freight wagons;
- Developing intelligent tools to support maintenance scheduling that can integrate maintenance operations tasks into daily services, while assigning maintenance crew and technicians according to their skills/competences, thus increasing availability and punctuality;
- Setting-up and validating an open architecture able to carry asset management data to the operator beyond the locomotive bogie (freight wagons, track condition, etc.) allowing the operator to extract more insights and value from the collected data;
- Increasing the freight reliability, availability (reducing downtime), provide a shift from inspection activities and LCC associated to cost-effective monitoring online solutions, improving overall competitiveness of freight rail transport;

Providing a comprehensive methodology to derive minimal digital twins of a complex mechatronic railway system. This technology will be introduced by the development of a minimal digital twin for the bogie system, based on vehicle dynamic simulations and post-processing, while considering the requirements of the system.

6.3. Project graphic identity

6.3.1. Logo

As a first step, the project logo was prepared and approved by all partners. The LOCATE logo type is made with a round, sober and modern typography, specially designed to represent a truck, and radio waves that can detect defective parts. The letter A also represents the symbol of the location. Grey symbolises the railway, rolling stock, technology; and orange safety, prevention and communication.

This logo will be used further for all dissemination actions and will play a role of utmost significance in creating project association regarding visual communication.

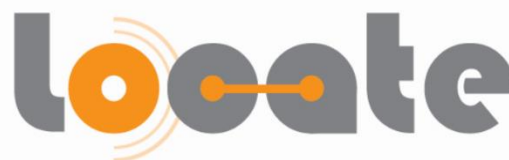


Figure 4 LOCATE Logo

6.3.2. Project templates

Project templates for Powerpoint presentations, word reports and meeting agenda and minutes, were prepared immediately after the creation of the project logo. This Deliverable Report was made according to the deliverable template that will be used for all project deliverables.

6.3.3. Project Flyer

An A5 flyer will be prepared in the first months of the project. It will contain a synthetic description of the project background, objectives and expected outcomes as well as facts and figures and the list of partners at the kick-off date. It will be largely distributed by the project partners in all coming events, like Rail Live, TRA, TEN-T Days, Innotrans 2020 and events organised by the project partners. A pdf version of the flyer will be made available for download on the project website and advertised through social media accounts of project partners.

6.4. Project public website

A dedicated website was set up at the beginning of the project using the already set graphic identity. The URL of the website is <https://locate-project.eu/>. The website is publicly accessible, mobile friendly and is linked to Google Analytics to keep track of visitors. The public website contains the following pages:

- Presentation of the project
The "About" Page will give the visitors an overview of the project aims, objectives and work plan.
- Consortium
This page will display the list of all partner companies. Access to the partner websites will be allowed by clicking on their respective logos.
- News and events
The "News" page provides information on past and upcoming events such as project meetings, participation in international conferences, etc. It will be updated regularly. News should also speak to non-experts so they will be written in a clear and understandable manner without jargon.
- Documents and download
All LOCATE publications (Press releases, flyer, newsletter...) and deliverables produced during the lifespan of the project will be made available in this section.
- Contact form (to send messages and requests to the dissemination WP leader)

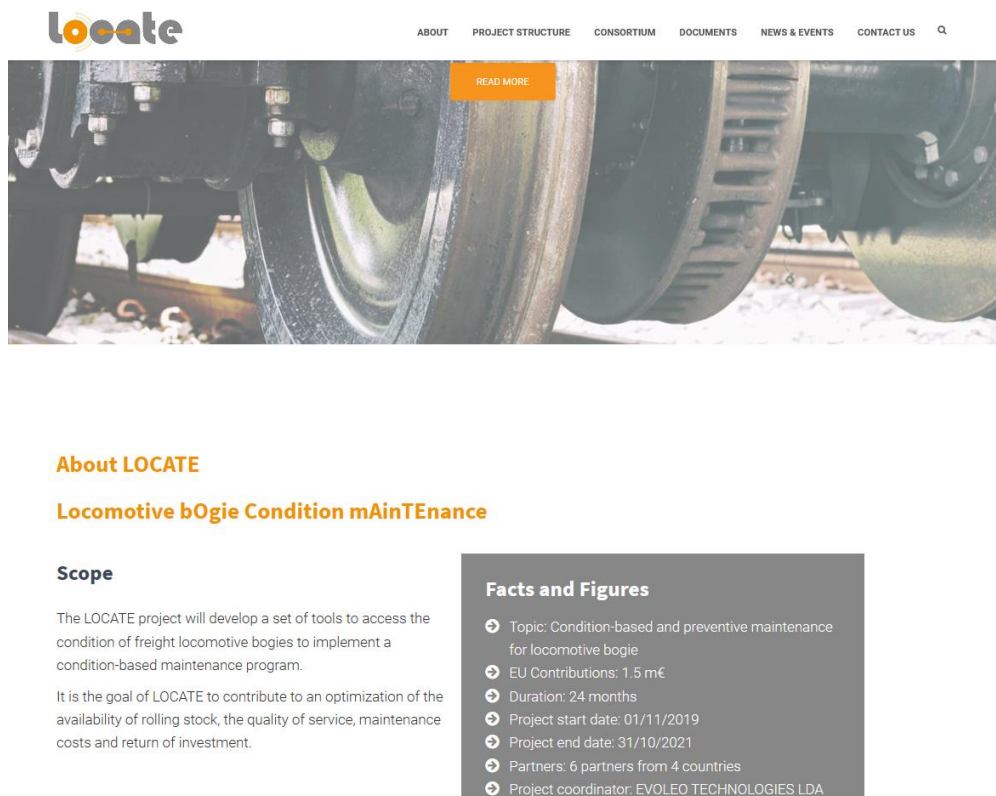


Figure 5 LOCATE website homepage

The structure of the public website will adapt and be amended to suit the project and partner's requirements as delivery occurs. The website will remain online after the end of the project.

6.5. Social media

Social Media will be largely used to communicate about the project objectives and results.

Twitter and LinkedIn will be the two preferred media for this purpose.

We will use the established twitter and linkedIn accounts from the project partners and from Shift2Rail to communicate about the project and share the available documents. We will always use the (#LOCATE_Project) so that all communication about the project is focused and gathered under the same #.

Regular posts will be prepared by LOCATE partners for sharing on S2R social media channels, and this content will be put on the [S2R Projects Communication Planning Goolesheet](#).

6.6. Participation in international conferences and forum

Apart from the final conference, some other conferences and public events will be targeted where LOCATE can be presented and communicated to a wide audience. LOCATE will be presented during high-level EU events such as:

- InnoTrans 2020 (Berlin, Germany, 22-25 September 2020);
- Rolling Stock Maintenance Europe (London, United Kingdom, 18-19 November 2020);
- IAVSD Symposium on Dynamics of Vehicles on Roads and Tracks, (St. Petersburg, Russia, 16-20 August 2021);
- Transport&Logistic exhibition (München, Germany, 4-7 May 2021);
- World Congress on Railway Research “WCRR”;
- Transport Research Arena “TRA”;
- TEN-T Days;
- Alpine Rail Optimisation Event;
- International Wheelset Congress;
- International Heavy Haul STS Conference;
- International Congress and Exhibition on Condition Monitoring and Diagnostic Engineering Management “COMADEM”;
- IEEE International Conference on Intelligent Transportation Systems, and;
- On events related to relevant research programmes organised by local authorities and by the EC and to facilitate the publication of results and conclusions in the academic community.

The dissemination partners especially will be active in the promotion and dissemination, by joining these and other major events and conferences and presenting objectives, results and achievements of the project.

6.7. publications/articles

Regular information shall be published through the usual channels of the different associations involved in the project, such as:

- Shift2Rail channels;
- UIC e-News (an article will be published in the weekly UIC electronic letter for each or event, like Kick off and final event of the project) as well as any important result achieved by the project partners. The UIC e-News is sent to more than 4000 addresses in the railway community all around the world. These articles will also be made available on the project website;
- And all partners’ existing communication and dissemination channels of the partners involved in LOCATE. These include (electronic) newsletters, websites of the project partners and partner related communication or working events.

Project results are also planned to be published through articles mainly in specialised press and scientific journals, such as:

- Railway Gazette,
- International Railway Journal “IRJ”,
- European Rail Technology Review, “RTR”,
- European Railway Review,
- Journal of Rail and Rapid Transit “JRRT”,
- Revue Générale des Chemins de Fer “RGCF”,
- Rail Technology Magazine, etc.

Furthermore, academic partners will ensure that technical outputs are widely disseminated in journals and peer reviewed literature.

6.8. Advisory board

LOCATE’s partners will establish an Advisory Board (AB) in the first months of the project. It will comprise a high-level international panel of experts from different areas of knowledge that will provide an additional form of quality control, advice, and validation of the vision, global impact and outreach of the project. The AB will communicate with the STC throughout the project lifetime and will make use of their networks to disseminate and exploit the project results, at the European and International level.

The representatives of the AB will be invited to attend all LOCATE consortium and AB Meetings along with consortium members.

6.9. Cooperation with other relevant S2R and EU activities

Particular emphasis will be put on coordinating the activities of LOCATE with complementary Shift2Rail projects, primarily FR8HUB (GA 777402) and FR8RAIL (GA 730617).

For instance, members of FR8HUB (GA 777402) and FR8RAIL (GA 730617) will be invited to the Advisory Board of LOCATE.

The project partners will also ensure close collaboration with the Shift2Rail and actively participate in liaising, disseminating and communicating activities promoted by Shift2Rail.

6.10. Organisation of a final event

A LOCATE final conference will be organised around month 24. The Final event will be used to present the major project results, raise awareness about LOCATE's key conclusions, and prepare the implementation of LOCATE partners' recommendations.

This event will be open to anyone interested in participating. To ensure maximum participation, invitations will be sent to the key actors in the field and the event location will be chosen carefully.

The final conference will provide a platform to discuss the achieved results of the project. Solutions for the identified problems and challenges will be presented based on the LOCATE project results and the harmonisation of needs, requirements and demands facing the Shift2Rail expectations will be discussed.

6.11. Project final brochure

A Recommendation Brochure will be issued with the lessons learned from the project. In addition to having the general information about LOCATE, it will provide more detailed information about the project's results acting as a means of exploitation. This brochure will be produced close to the project end and will be disseminated through targeted mailing as well as relevant workshops, conferences and other face-to-face interactions with the target group members. A pdf version will be available for download on the project website. Social media will be used intensively to promote this document.

7. ORGANISATION OF THE WORK PACKAGE

The leader of the Dissemination, Communication and Results Exploitation work package (WP7) is UIC.

The Dissemination Manager is responsible for:

- Producing dissemination material;
- Organising the final conference;
- Keeping track and reporting back to the coordinator on the project dissemination activities;
- Ensuring proper use of public dissemination materials with respect to partners' IPR's;
- Ensuring consistency of project image and published contents;
- Making sure of optimum use of the project dissemination resources.

Partners are expected to contribute by:

- Identifying and informing the consortium about dissemination opportunities (e.g. events, publications, etc.);
- Promoting the project results in their own organisation with press releases and web pages;
- Submitting technical papers and presenting the project results at relevant external conferences according with the project quality plan;
- Ensuring liaison with appropriated standardisation bodies;
- Suggesting stakeholders to be invited to the related conferences to promote the project.

All dissemination actions undertaken for LOCATE will be reported to the dissemination manager (UIC) using the excel tables specially prepared for this data collection (see excel tables for dissemination and communication activities and for publications in appendice).

8. Conclusions

This document provides plans in the areas of dissemination and communication. It presents a comprehensive dissemination strategy for the LOCATE project and describes the materials and strategies that have been and will be used for internal and external communication, along with the engagement and uptake of the results by relevant stakeholders.

A series of dissemination events has been planned, but it is anticipated that more dissemination opportunities will arise as the project progresses. Therefore, the LOCATE consortium will use this plan as an initial strategy which will be further updated and reviewed on a regular basis. Dissemination activities will be discussed at WP level and will be coordinated generally via WP7.

The specific cooperation with the Shift2Rail Joint Undertaking and the relevant IP5 projects will be a key activity to ensure both success of LOCATE and Shift2Rail.

The results of the activities of this work package and the impact of LOCATE will be monitored by the project coordinator, EVOLEO.

9. Appendices

9.1. Dissemination and communication activities excel file

Categories	Date	Location	Name of action / Short description	Link	Please specify the number of persons reached for each category									
					Scientific Community (Higher Education, Research)	Industry	Civil Society	General Public	Policy Makers	Media	Investors	Customers	Other	
Press release	12/11/2019	UIC eNews #668	Article in the UIC Enews: "LOCATE kick-off meeting held from 4 – 5 November 2019 at EVOLEO in Porto"	https://uic.org/com/uic-e-news/668/										
Twitter	Nov. 2019 Jan. 2020	Twitter Partner accounts	First posts to announce launch of project and website	https://twitter.com/Chassoun1/status/1194535662999031808?s=20 https://twitter.com/Chassoun1/status/1220296431636008960?s=20										
LinkedIn	Nov. 2019 Jan. 2020	LinkedIn Partner accounts	First posts to announce launch of project and website	https://www.linkedin.com/in/christine-hassoun-houarbi/detail/recent-activity/shares/										
LOCATE Website	Jan. 2020	LOCATE website	Launch and running of LOCATE website	https://locate-proiect.eu/										

9.2. Publication excel file

D.O.I.	Type of Publication (please select in the menu)	Repository link	Link to the publication	Title	Authors	Title of the Journal/Proceedings/book series/book (for book chapters)	Number, date or frequency of the Journal/Proceedings/book	Relevant page(s)	ISBN	Publisher	Place of publication	Year of publication	Open Access			Is this a peer-reviewed publication		Is this a joint public/private publication		
													<input type="checkbox"/> Yes, available in green open access	<input type="checkbox"/> Yes, available in gold open access	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
													<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
													<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Type of Publication
Article in Journal
Publication in conference proceedings/Workshop
Book/Monograph
Chapter in a book
Thesis/Dissertation
Other