SEMANTICS FOR PERFORMANT AND SCALABLE INTEROPERABILITY OF MULTIMODAL TRANSPORT

D6.4 - Dissemination and Exploitation activities

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EXECUTIVE SUMMARY

This document provides a description of the SPRINT dissemination, communication and exploitation activities carried out during the whole duration of the project. The aim of this report is to provide a detailed description of the dissemination strategy and how this was implemented during the 27 months of project implementation, including the materials and strategies that have been used to facilitate the wide-spread of information and knowledge of the results created by the project. The dissemination of SPRINT was essential throughout the project's life and for this reason it needed to be carried out with the cooperation of all Work Packages.

In this respect, materials and strategies that were used for communicating and disseminating SPRINT to the target audiences and the general public, as described in the dissemination and exploitation plan (D6.3), are presented in this report. Those include: the creation of a project identity; the creation of a public website; the creation of a project brochure; the production of two newsletters; the organisation of dissemination events; the participation to conferences/webinars and the publication of results in relevant journals/conferences.

ABBREVIATIONS AND ACRONYMS

Abbreviation	Description
API	Application Programming Interface
CFM	Call For Members
EU	European Union
H2020	Horizon 2020 framework programme
IF	Interoperability Framework
IP	Innovation Programme
JU	Joint Undertaking
MSP	Managed Service Provider
S2R	Shift2Rail
SPRINT	Semantics for PerfoRmant and scalable INteroperability of multimodal Transport
TAP	Telematics Applications for Passenger Services
TMC	Technical Management Committee
TRA	Transport Research Arena
TSGA	TAP TSI Services Governance Association
TSI	Technical Specification for Interoperability
WP	Work Package

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION

The SPRINT communication and dissemination strategy has been designed to provide the most extensive coverage, meeting the limitation of the scale of the project and ensuring an efficient and coordinated take-up by the Shift2Rail JU with their future R&D activities. The activities are also designed to ensure a solid communication of the project with actors outside of the Shift2Rail JU. The overall approach, which also reflects the way in which this document is structured, focuses on the following three elements:

1. Public dissemination of SPRINT activities;
2. Targeted dissemination of SPRINT through various events, conferences, publications etc.;
3. Exploitation activities.

The first element focused on the wide dissemination of project results through several means like the creation of the public website which was kept up to date with relevant content and information, along with the publication of the project brochure and project newsletters.

The second element focused on the dissemination of the project through the publication of papers or through articles in magazines/journals, attendance and presentations in specific events etc.

The third element focused on the exploitation of the SPRINT developments.

All the above-mentioned elements will be described in more detail throughout this document.

1.1 BACKGROUND

The SPRINT project will make steps towards the uptake of the fourth Innovation Program's (IP4) multimodal transport ecosystem by addressing the following specific challenges arising from TD4.1's objectives:

- Improve the Interoperability Framework (IF) performance and scalability to sustain a large deployment.

- Simplify/automate all the necessary steps needed to integrate new services and sub-systems in the IP4 ecosystem.

Moreover, SPRINT contributes to the realisation of the IF by:

- masking the complexity of interoperability to travel applications by publishing in the IF's Assets Manager uniform abstractions of services enabling travel applications to know how to communicate with them (e.g., web service/API interfaces, communication protocols);

Providing additional technical means to operate on the "web of transportation data"; for example, the IF will enhance its ability to act as a (distributed) broker to communicate with different services and as a means to dynamically discover, bind and inject data and services, including the MSP identification on the basis of their geographical area and offered service capabilities.

Throughout this document, the terms 'dissemination' and 'exploitation' will be used frequently. The definitions used by the authors are shown below:

- *Dissemination*: The aim of dissemination is to spread the outputs of the project among interested parties. This activity involves presentation of the project's results to the European railway community and the industrial and scientific community, while managing knowledge within the consortium. The means to achieve this are described in this document

- *Exploitation*: The aim of exploitation is to favour the market uptake through the use of the results of the project, particularly by using them in further research activities (outside the action). This activity involves the use of the project's results and developed technologies by the suppliers and end users. It involves working closely with all work packages to ensure outputs are captured and partners are able to engage with potential customers and also that they are supported in the development of the project outputs in order to produce products and services that can be exploited.

Dissemination and exploitation of results are crucial to the acceptance and implementation of technologies developed in the project by suppliers and end-users.

2. EXTERNAL COMMUNICATION

External communication was of key importance for maximising SPRINT's impact and for disseminating the project results. Communication of the project research activities involved reaching relevant transport stakeholders, the scientific community and creating awareness among the general public. This has been achieved through creating a project identity and a public website, attending to conferences and relevant events and publishing papers and articles.

2.1 PROJECT IDENTITY

A project identity has been created at the beginning of the project including templates for presentations, reports, a project brochure as well as the SPRINT logo. The project identity considerably helped dissemination activities and ensured a consistent communication of the project concept, objectives and results. The brochure has been distributed at project workshops and conferences, where project partners have participated, and it can also be downloaded from the SPRINT public website.

Figure 1: Snapshots of the SPRINT brochure

2.2 WEBSITE

A dedicated website was created at the beginning of the project and has been updated throughout the life of the project. The website (http://www.sprint-transport.eu/) is publicly accessible, with a section where visitors can register their interest. It is divided into two parts: the public portal and the cooperation tool (member's area), which acts as an exchange platform between the project partners.

The public portal is open to the public and displays the key project information, partners, results, news/events and links to the partners' websites. All the public deliverables are published on the website and are available for download.
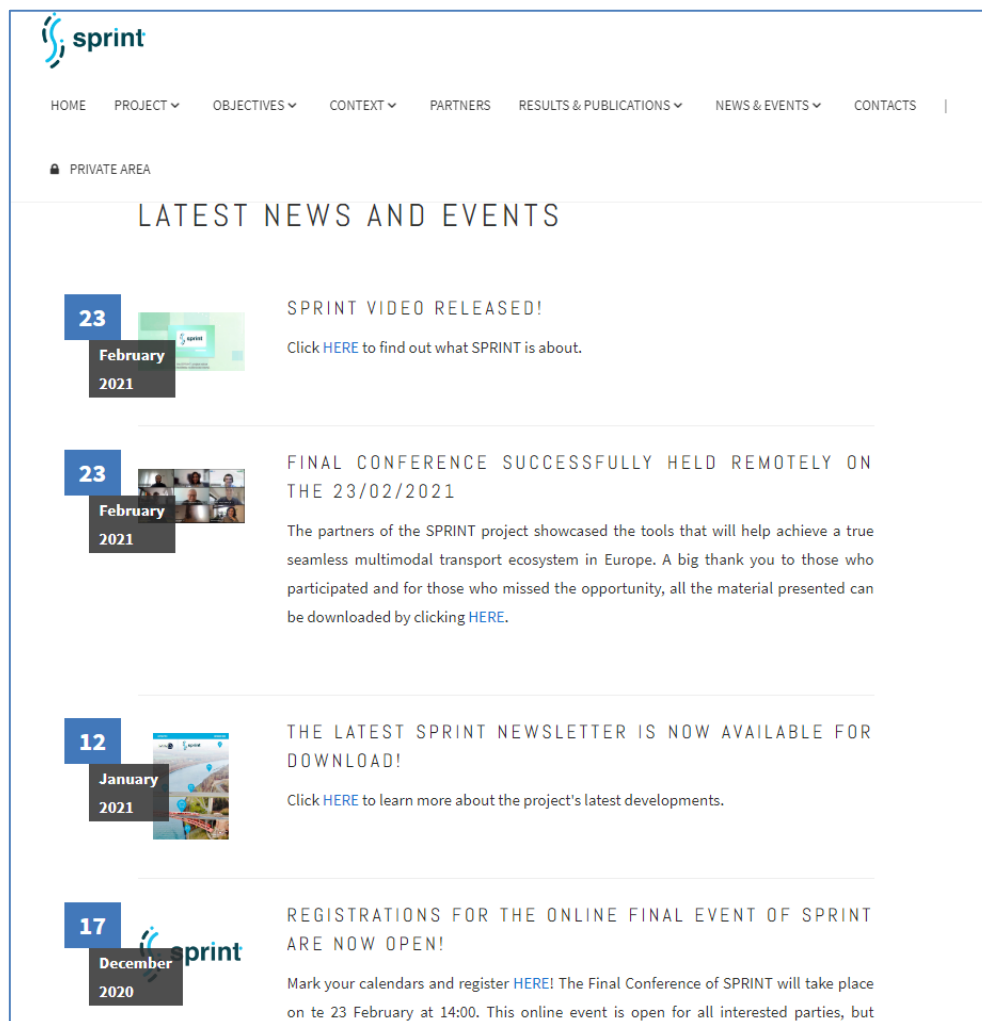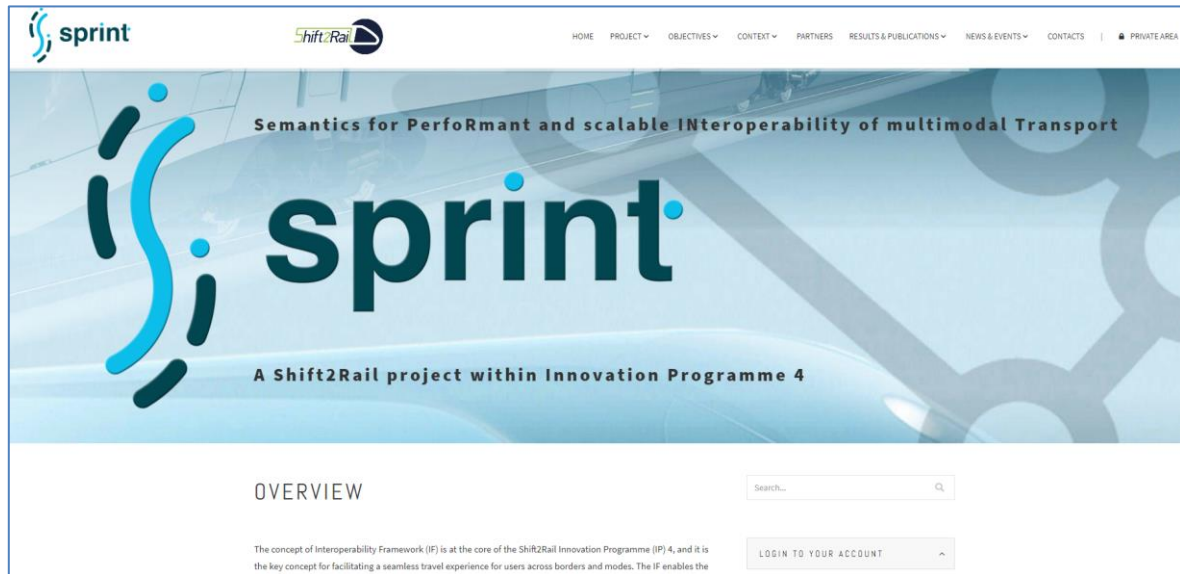
Figure 2: Snapshots of SPRINT Public website homepage

The detailed analytics of the SPRINT website, showing the amount of new and returning visitors throughout the life of the project, as well as the countries from which they connected can be seen in Figure 3.
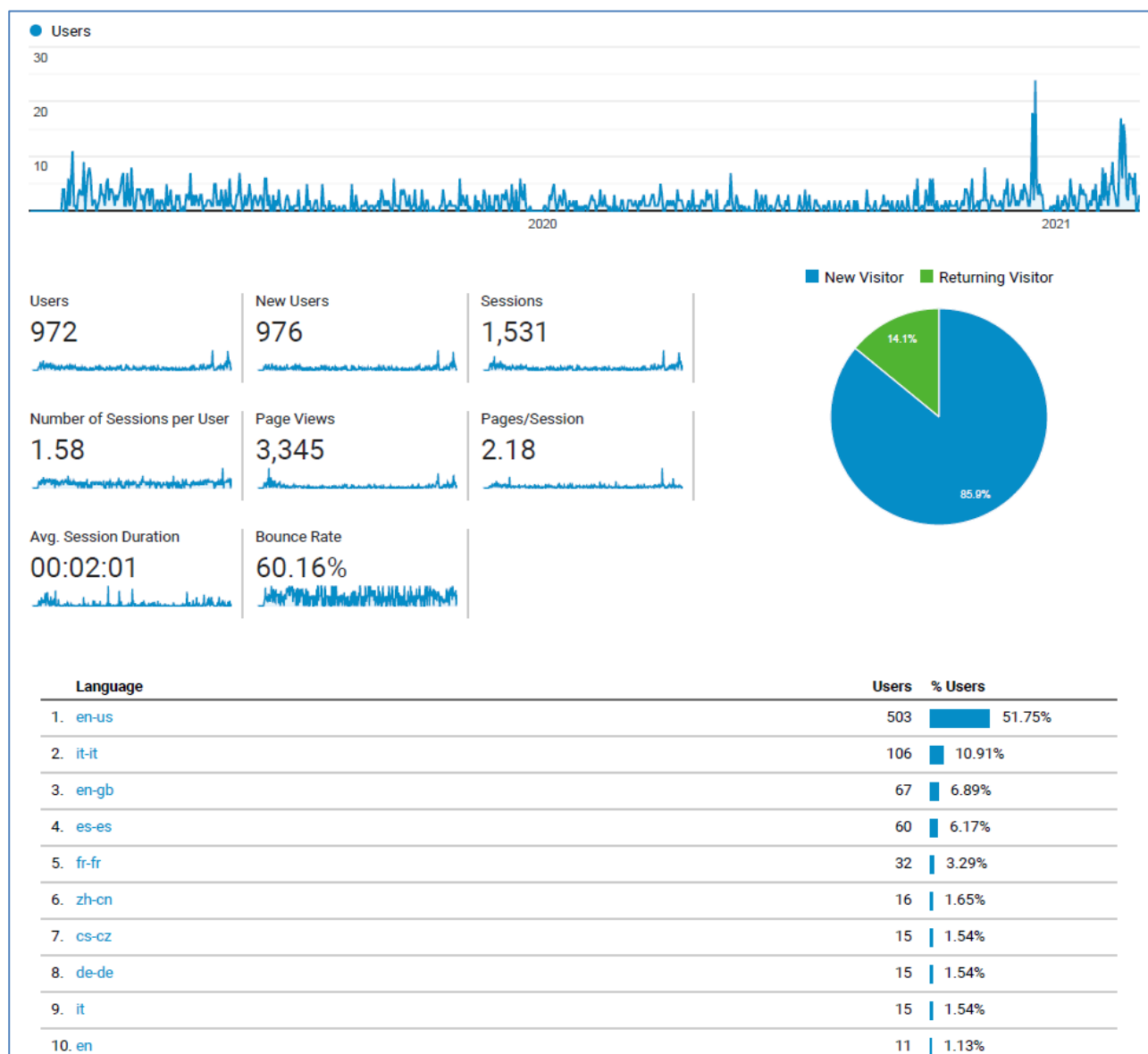

Figure 3: Analytics of SPRINT public website

The project has produced two newsletters, one towards the middle of the project and another one in the end of the project, providing up-to-date information on the status and achievements of the project at these particular times.

The first newsletter was released in December 2019 and the second one in December 2020. Some hard copies of the newsletters have been printed for distribution during public events where the project was disseminated, but they have also been made available for download on the SPRINT public website.
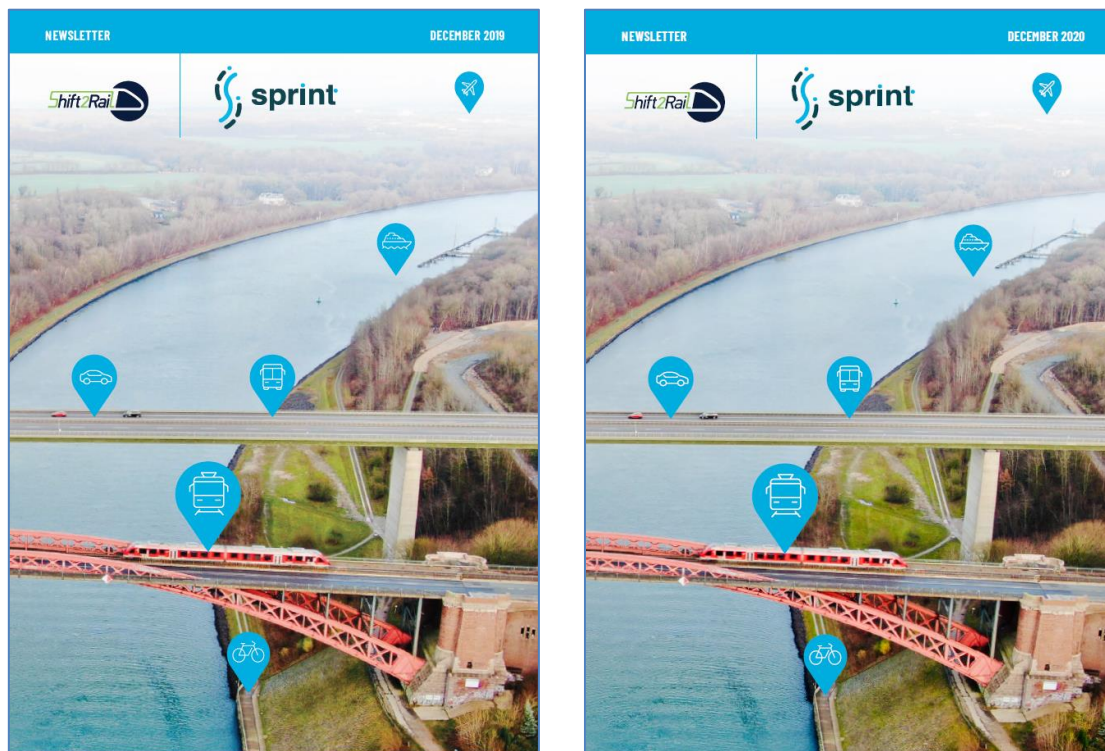
Figure 4: Snapshots of SPRINT Newsletters

The SPRINT consortium has organised two major project events during the life of the project, a kick-off meeting on the 10th January 2019 (in collaboration with the Shift2MaaS project) and a Final Conference on the 23rd February 2021, which was held remotely due to the travel restrictions imposed by the Covid-19 pandemic.

- The SPRINT kick-off meeting was organised in Brussels. Other than the SPRINT project partners, the event also brought together partners from the corresponding CFM project (CONNECTIVE), but also representatives of the Shift2Rail JU. The event was an opportunity to discover more about the project objectives of SPRINT and for the project partners to understand better the interactions with the corresponding CFM project and the overall IP4 ecosystem.

Figure 5: Pictures from the SPRINT kick-off meeting

The combined kick-off meeting of the SPRINT and Shift2MaaS projects also served as the first collaboration workshop with the Call for Member (CFM) projects of IP4 (MaaSive + CONNECTIVE + COHESIVE).

Figure 6: First collaboration workshop between OC and CFM projects of IP4

- As explained above, the final conference of SPRINT was organised remotely due to the Covid-19 pandemic. Through the presentations and demonstrations, the participants had the opportunity to learn more about the project results. The event was also attended by the corresponding CFM project (CONNECTIVE), representatives of the Shift2Rail JU and it was also open to the wider audience. The presentations that were shown during the final conference are available for download on the SPRINT public website. The event was also promoted through the UNIFE twitter account
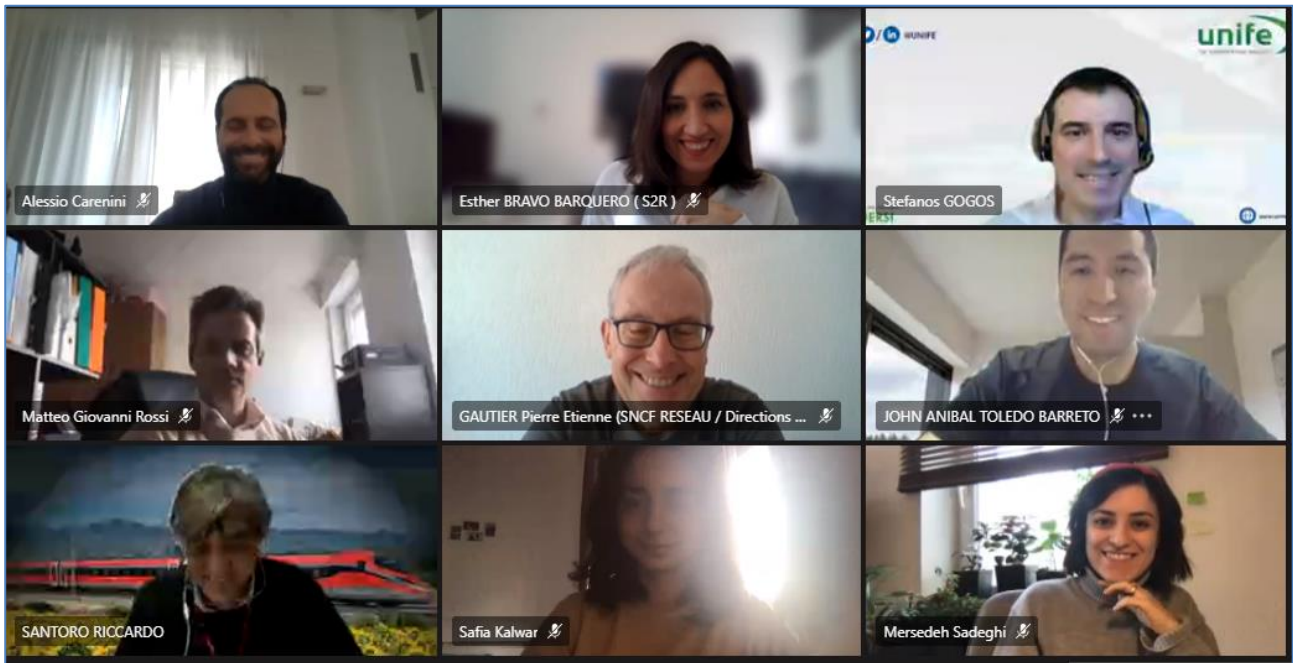

Figure 7: Virtual group picture during SPRINT final conference

2.5 PRESENTATIONS & PUBLICATIONS

Despite the fact that the global pandemic has meant that several major conferences had to be cancelled and that the physical presence of partners in various events had been affected dramatically, the project results have been disseminated through papers and in relevant national and international conferences and workshops. SPRINT partners have actively looked-out for high profile academic and industrial events that are within the domain of interest of the project. Throughout the life of the project, SPRINT has been presented/published in the following events and press:

Table 1: Targeted Publications and Conferences

Event/Publication	Title/Description	Partner(s)
International Workshop on Semantics for Transport (Sem4Tra), 9 September 2019, Karlsruhe	Paper entitled 'Automated Mapping for Semantic-based Conversion of Transportation Data Formats'.	POLIMI

Event/Publication	Title/Description	Partner(s)
International Workshop on Semantics for Transport (Sem4Tra), 9 September 2019, Karlsruhe	Paper entitled 'Turn Transportation Data into EU Compliance through Semantic Web-based Solutions'	CEFRIEL
Shift2Rail 2020 Call Info-Day and ETNA Workshop, 17-18 December 2019, Jerusalem	SPRINT presentation during workshop	UNIFE
TRA2020, 27-30 April 2020, Helsinki (event cancelled but the paper submitted was still published.	Paper entitled 'SPRINT: Semantics for PerfoRmant and scalable INteroperability of multimodal Transport' has been accepted for poster presentation.	POLIMI, OLTIS GROUP, CEFRIEL, UPM, UNIFE, FST
Shift2Rail webinars "Moving around Europe seamlessly", 12 and 14 May 2020, online event	Presentations during webinar showcasing innovations from a TSP's perspective on: - How a new TSP registers into the IP4 ecosystem; - Converter publication and access; - Dataset publication and access.	CEFRIEL
Shift2Rail Innovation Days, 22-23 October 2020, online event	SPRINT presentation during CONNECTIVE slides	INDRA
19th International Semantic Web Conference (ISWC2020), 02-06 November 2020, online event	Paper entitled 'Turning Transport Data to Comply with EU Standards while Enabling a Multimodal Transport Knowledge Graph'	CEFRIEL
IT-TRANS, 01-03 December 2020, online event	SPRINT showcased in exhibition space of IT-TRANS	UITP
SmartRail Week, 07-11 December 2020, online event	SPRINT presentation during day dedicated to 'Future of Transport - Providing a More Integrated Service'	UNIFE
Paper published in journal of web semantics (volume 65).	Paper entitled 'GTFS-Madrid-Bench: A benchmark for virtual knowledge graph access in the transport domain'	UPM
Paper accepted for the 36th ACM/SIGAPP Symposium On Applied Computing, March 2021	Paper entitled 'A semantic-based access control mechanism for distributed systems'	POLIMI

2.6 SOCIAL MEDIA

The SPRINT project was also disseminated through social media, via the already established accounts of the project partners (i.e. twitter accounts). This way, whenever any major event or project development involving SPRINT was taking place, its reach was maximised as much as possible.
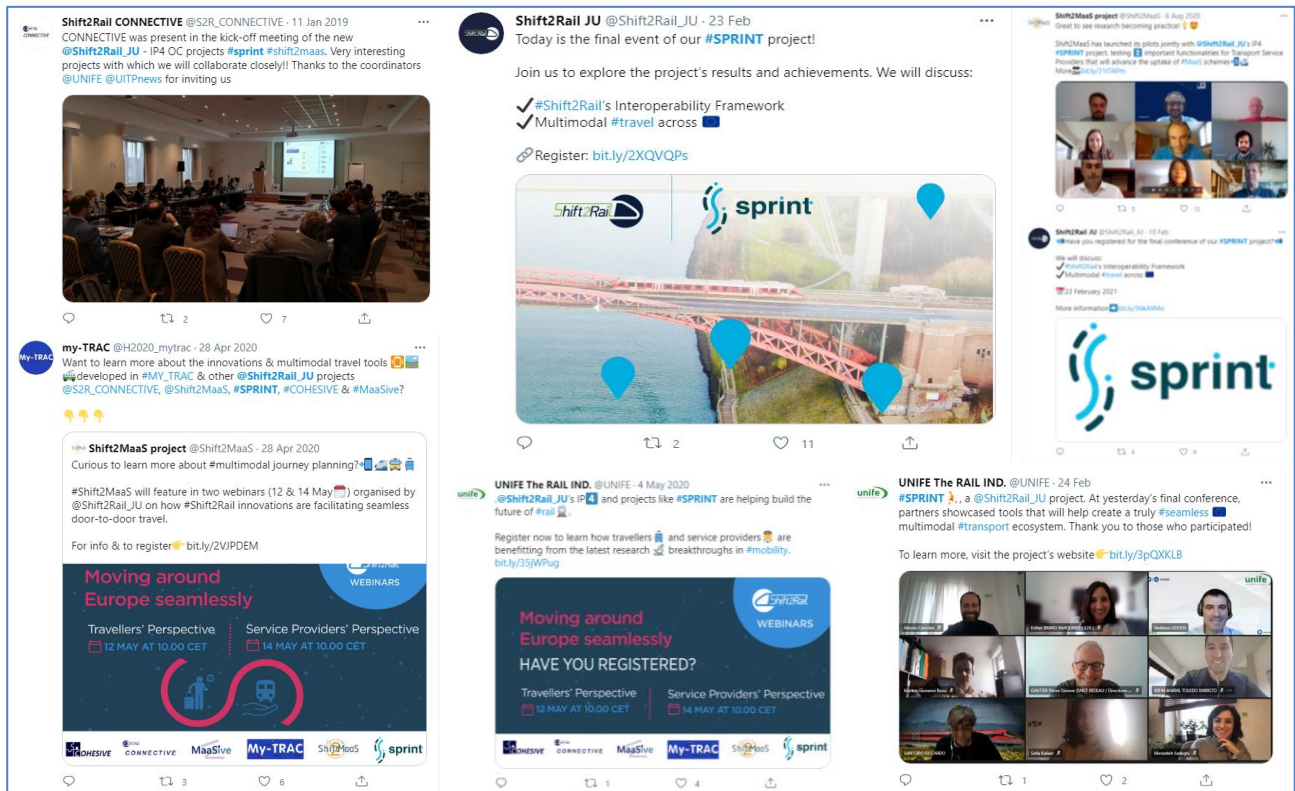

Figure 8: Snapshots of tweets published during the life of SPRINT

2.7 VIDEO

The opportunity to create a video for the project was generated due to the fact that many conferences have been cancelled during the global pandemic, combined with the fact that the project's final conference was also a virtual event. The consortium partners therefore agreed to use the budget that was originally dedicated to attending such conferences and organising the SPRINT final conference to the creation of a project video instead.

The SPRINT video explains in a nutshell the project objectives and achievements, giving the opportunity to clearly disseminate SPRINT in a very short time, even beyond the life of the project. The video in question can be downloaded from the SPRINT public website or streamed through the following link: https://vimeo.com/515816722

Additional technical videos were created throughout the life of the project, to demonstrate the project developments during webinars and also during the final conference. All the material in question can be downloaded from the SPRINT public website as well.

3. EXPLOITATION ACTIVITIES

Exploitation activities have a broader timeframe in comparison to the dissemination activities, as they have started during the project implementation, i.e. through the transfer of results into the CONNECTIVE project, but may also continue after the conclusion of the project. Moreover, exploitation will continue through the interactions of SPRINT partners with stakeholders outside of the consortium to improve the acceptance and recognition of SPRINT results after the end of the project.

The exploitation strategy was technology and market oriented and has been based on two levels:

i.   Transfer of project results into CONNECTIVE project to ensure proper integration in the planned activities. The SPRINT consortium has pursued an effective cooperation with the members of the JU involved in this project through constant cooperation throughout the life of SPRINT;

ii.   Exploitation of project results in other R&D activities and market uptake: The results of SPRINT could be also relevant as input for future R&D activities and be marketable in the near future, as partners will be able to follow individual exploitation strategies as owners of the foreground developed in SPRINT.

3.1 EXPLOITATION MEASURES

To ensure the good transfer of results between SPRINT and Shift2Rail, the following steps have been taken:

- Developed and signed a Collaboration Agreement with CONNECTIVE;
- Ensured a smooth transfer of SPRINT results to the complementary CFM project CONNECTIVE, through the organisation of technical workshops on specific subjects identified, whenever needed. These direct technical interactions have facilitated the knowledge transfer for the purpose of the Shift2Rail activities;
- Regular interactions with the S2R JU, through the IP4 Steering Committees, where possible issues have been identified and resolved in time between the relevant actors. An additional meeting with the IP4 partners and the TSGA was also organised on the 25th October 2019 in Brussels to discuss the links between IP4 and the TAP TSI community.

All this exchange of information enabled the SPRINT project to provide feedback to the relevant stakeholders in Shift2Rail, but also to collect suggestions that have been relevant for the activities of the project. To that end, various IP4 dissemination workshops have been organised, encompassing all the IP4 projects in order to coordinate dissemination and demonstration activities during major events/conferences.

The joint work with CONNECTIVE aimed at integrating the Operator Portal provided by CONNECTIVE and the Asset Manager developed by SPRINT. The Asset Manager is now integrated in the IP4 ecosystem, and the Asset Manager can be used as data and metadata catalogue by the Operator Portal frontend. To this extent, the Asset Manager is providing an initial set of asset types as suggested by requirements provided by CONNECTIVE. Identity management was also shared between CONNECTIVE and SPRINT, and the Asset Manager is now able to use the same system

which is in place for the rest of the IP4 ecosystem. The automation features of the Asset Manager were also exploited, and an automatic data conversion procedure is in place to acquire GTFS datasets from TSPs and to send it in RDF format to the IP4 data layer.

The overall architecture of the SPRINT IF was also sent to CONNECTIVE to provide suggestions for improvements to the IP4 IF architecture. Being available as a public and open source project, the Converter framework implementation was also offered to CONNECTIVE as a scalable solution to implement new Service Implementation inside Brokers.

Furthermore, in August 2020, the SPRINT and Shift2MaaS projects combined forces to test important functionalities, through which the Asset Manager (developed by the SPRINT project) was tested. The tests were executed virtually, by letting TSPs use the functionalities, giving them the chance to provide feedback. The results of the tests will be provided by Shift2Maas to the Shift2Rail JU as recommendations for improving the functionalities to encourage their market uptake.

This report has provided an exhaustive list of all dissemination/communication activities carried out during the 27 months of project implementation. A large audience has been reached by SPRINT messages, ensuring a proper dissemination of the project developments.

At the same time, the SPRINT partners have shown their engagement towards the market uptake of the results and have ensured through their exploitation activities the smooth and effective transfer of results into the corresponding Shift2Rail project, with a potential path for the Shift2Rail JU in terms of opportunities for future research.