PROJECT

SPRINT

Semantics for PerfoRmant and scalable INteroperability of multimodal Transport

Funding: European
Duration: Dec 2018 - Dec 2020
Status: Complete
Total project cost: €1,999,500
EU contribution: €1,999,500

CORDIS RCN: 219769

Background & policy context:

The Semantics for PerfoRmant and scalable INteroperability of multimodal Transport (SPRINT) project will make steps towards the uptake of the IP4 multimodal transport ecosystem by addressing the following specific challenges arising from TD4.1’s objectives and explicitly addressed in the S2R-OC-IP4-01-2018 topic:

- Improve 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.

Objectives:

SPRINT Objectives:

- Definition of a reference solution to automate the creation/extension of domain ontologies.
- Evaluation of the complexity-expressivity trade-off between the adoption of fully-fledged ontologies and light-weight schemas.
- Potential extension to existing IP4 ontologies.
- Assess and enhance/revise IT2Rail IF software components and resolvers in order to automate as much as possible the mechanisms to join the multi-modal transport ecosystem and to improve IF performance and scalability. This contribution will be (i) complementary to the work performed by the parallel CONNECTIVE project, and (ii) compliant with the governance structure defined by GoF4R.
- Assess and revise/enhance the ST4RT approach to automate the definition of ontology-based annotations and mappings.
- Assess and revise/enhance the ST4RT approach to automate the conversion/translation of heterogeneous messages exchanged by different systems, without asking for changes in their data structures and communication protocols.
- Evaluate the architectural solutions adopted in IP4 projects and propose enhanced/alternative architectural solutions and new software paradigms for the IF and for each of them evaluate how current performance and scalability issues can be solved. This contribution will be complementary to and coherent with the work performed by the parallel CONNECTIVE project.
- Define recommendations for IP4 to support the market uptake by simplifying/automating all the necessary steps which are needed to integrate new services and sub-systems in the multi-modal transport ecosystem.
- Document best practices and recommendations to adopt semantic interoperability solutions as assessed and proposed in the project.

**Parent Programmes:**
*Shift2Rail - Shift2Rail*

**Funding type:** Public (EU)

**Lead Organisation:**

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<th>European Union Road Federation</th>
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| **Address:** Avenue Louise 106  
1050 BRUXELLES  
Belgium |
| **Organisation Website:** [http://www.unife.org](http://www.unife.org) |

**Partner Organisations:**

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| **Address:** Dr Milady Horakove 1200/27A  
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1040 BRUXELLES  
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| **EU Contribution:** €60,000 |

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| **Address:** VIALE SARCA 226  
20126 MILANO  
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| **Address:** Rue Ste. Marie 6  
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| **Organisation Website:** [http://www.uitp.org](http://www.uitp.org) |
| **EU Contribution:** €185,625 |

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| **Organisation Website:** | http://www.polimi.it  
| **EU Contribution:** | €313,750  

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| **Organisation Website:** | http://www.upm.es  
| **EU Contribution:** | €248,750  

**Technologies:**
- Information systems
- ICT support system for multimodality

**STRIA Roadmaps:** Network and traffic management systems

**Transport mode:** Multimodal transport

**Transport sectors:** Passenger transport

**Transport policies:** Societal/Economic issues, Other

**Geo-spatial type:** Network corridors