15-17 MAY
MONTRÉAL 2017
GLOBAL PUBLIC TRANSPORT SUMMIT

Interoperability and Governance of IT Solutions for Attractive Railway and Multimodal Transport Services: the point of view of EU Research.

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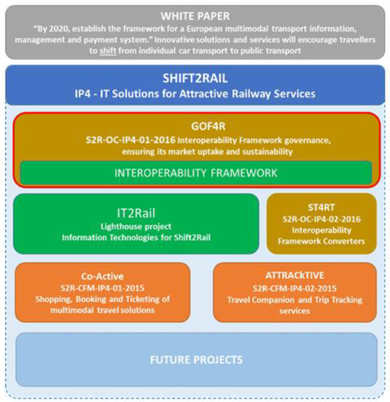
INTRODUCTION

Semantic interoperability enables organisations to process information from external sources in a meaningful manner. It ensures that the precise meaning of the exchanged information is understood and preserved throughout the exchanges between parties.

Semantic interoperability is one of the IP4 Shift2Rail challenges and consists in the establishment of a framework which will enable the business applications belonging to a critical mass of European travel and transport industry players to 'interoperate'. This will provide the customers with comprehensive information on the available transport options, along with the corresponding processes for their booking, payment, ticketing, consumption and modification. Moreover, exclusively for the business partners (e.g. transport service providers, distributors, retailers), also their financial settlement will be provided.

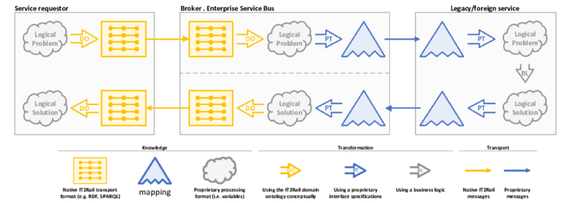
For more info:
www.shift2rail.org/research-development/ip4



THE IT2RAIL PROJECT

The Shift2Rail IP4 IT2Rail (**Information Technologies for Shift2Rail**) project is working to finalize the implementation of an Interoperability Framework (IF) addressing the Shift2Rail semantic interoperability challenge. Such IF must guarantee interoperability of IT2Rail multimodal services by relieving consumer applications from the tasks of locating, harmonizing and understanding its open-ended world of data.

For more info: www.it2rail.eu



THE GOF4R PROJECT

While the IT2Rail project focuses on the technical aspect of the IF, the Shift2Rail IP4 GoF4R (**Governance of the Interoperability Framework for Rail and Intermodal Mobility**) project is focusing on the design of an efficient governance structure for the IF, promoting its adoption and sustainability.

The governance consists in the identification of the roles to be assigned, and the tasks to be associated with each role, as well as in the definition of the appropriate rules.

The design of the governance structure for the IF must consider: (i) the structure and dynamics of the market for multi-modal mobility services; (ii) the regulatory framework for mobility services and related technology standards at the European, National and Local administration level, and (iii) the market and maturity of Semantic Web technologies for interoperability.

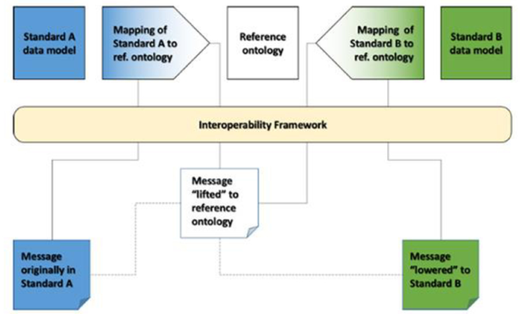
For more info: www.gof4r.eu

THE ST4RT PROJECT

A case scenario for exercising the GoF4R governance structure is provided by the Shift2Rail IP4 ST4RT (**Semantic Transformations for Rail Transportation**) project, that deals with the ontology-based automation of the transformations between existing European TAP-TSI specification exchanges by leveraging the IT2Rail IF components. The ST4RT project adopts the following approach:

- Two different standards A and B are semantically annotated in order to create mappings from their data models to the global reference ontology. The resulting mappings are the basis for the semantic transformations of the data expressed in the two standards into their respective ontological version.
- Whenever two systems that adopt the different standards A and B need to exchange information, the semantic transformation takes place. A message expressed according to standard A is "lifted" to its ontological version, and then it is "lowered" to a message expressed according to standard B.

For more info: www.st4rt.eu



ACKNOWLEDGEMENTS

These projects have received funding from the European Union's Horizon 2020 research and innovation programme.

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