iSTRADA - Intelligent System for Traffic and Road-infrastructure Related Data

**Funding:** National (Austria)  
**Duration:** Apr 2015 - Mar 2016  
**Status:** Complete

**Background & policy context:**
In recent years several regional and national projects have covered the topic “Intelligent Transport Systems (ITS)” (e.g. ITS Austria West, ITS Vienna Region, GIP.at transport graph, basemap.at, development floating car data-fleets and street sensors), which have laid the foundation for gathering, communicating, processing and storing road-traffic and road infrastructure related data. Furthermore, companies increasingly use telematics services for tracking and tracing their fleets for vehicle dispatching. Various stakeholders collect information in different and not-standardized data formats and IT-systems. As a result, comprehensive data mergers, analyses and benefits could not be achieved. However, these insights would have been necessary to develop new, concrete and useful applications for the complex field of ITS.

**Objectives:**
ISTRADa is a study to design an intelligent data-based system, which supports the safe and efficient operation of a transport infrastructure. Available data (infrastructure, vehicle fleets -, environmental and accident data) as well as existing technologies and methods are studied in order to develop specific research and implementation concepts in the areas of maintenance, environmental impact, minimize risk and increase efficiency to the supporting infrastructure managers in their decision-making, an evaluation of the feasibility and potential for further reaction.

**Methodology:**
Based on a requirement analysis with a strong involvement of the LOI partners and other stakeholders, the topics as well as available data bases and technologies are used to determine the best data format, processing, storage, intelligent combination, completion and analyses. The design of a data and technology framework serves to illustrate possible methods and technologies of Big Data domain for use in the field of transport infrastructure. In a further step, specific algorithms and coefficients must be taken into consideration, which enable the different data (-bases), according to their mutual relationships, to actualize and adapt the specific values reciprocally.

Furthermore, as a result iSTRADA provides a reference architecture of a data and technology framework for linking and analysing road infrastructure and road traffic data based on current “Big Data” methodologies and technologies, the collected requirements and potentials in transport infrastructure. In addition, concepts (research and implementation) should developed for the implementation of intelligent systems in selected fields so as to identify future scenarios in the operation of transport infrastructure to support decision-making processes of infrastructure managers.

**Parent Programmes:**
- MOTF - Mobility of the Future

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Organisation: Logistikum – die Logistik-Kompetenz der FH

Address: Wehrgrabengasse 1-3
Zipcode: 4400
City: Styr
Contact country: Austria
Telephone: +43 50804-33200
Organisation Website: [Organisation website]

STRIA Roadmaps: Cooperative, connected and automated transport, Infrastructure
Transport mode: Road transport
Transport sectors: Passenger transport, Freight transport
Transport policies: Safety/Security, Digitalisation, Societal/Economic issues
Geo-spatial type: Other