2017

Reading Instructions

Data Receiver

Table of Contents

List of Figures

List of Tables

Executive Summary

This document outlines reading instructions for the TN-ITS documentation from a data receiver's perspective. Only finalized project results and implementations are referenced in this document. Ongoing projects and initiatives might also be of value in order to understand the data transfer from a data sender to data receiver within the TN-ITS framework. However, these are not referenced in this document.

A corresponding document from the data sender's perspective is also published on the TN-ITS web site.

Purpose

The main purpose of this document is to:
- Give an overview of the steps necessary to implement a TN-ITS compliant data exchange;
- Provide reading instructions from the TN-ITS documentation relevant to these steps for receiving changes from the service and their transformation to the receiver's data store.

Generic Process Flow

This is a generic process flow that can be used to understand, at a high level, the steps required to achieve a TN-ITS compliant data exchange.

The role of the Data sender is normally held by an enacting authority (i.e. the entity responsible for supervising the establishment of laws and regulations for transport and traffic).

The role of the Data receiver can be held by any party using road data in applications (e.g. providing maps and data sets for use in ADAS and ITS applications).
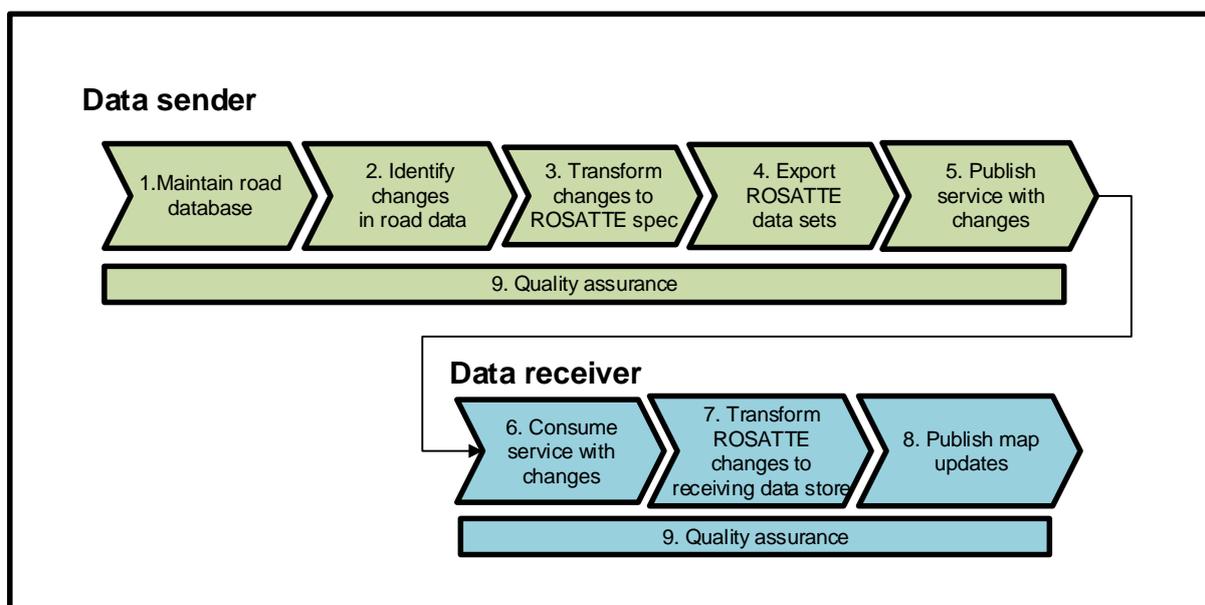

Figure 1: Generic Process Flow

This document sets out the reading instructions that cover the data receiver's requirements for the TN-ITS service and is structured according to the Generic Process Flow figure above.

A corresponding document relevant to the data sender's part is also published on the TN-ITS web site.

For an overview of the requirements and architecture regarding TN-ITS compliant data exchange, please see ROSATTE deliverable D1.2 – Requirements and Overall Architecture

Reading Instructions

Each of the tables below references information, from the TN-ITS framework and elsewhere, which is important in order to perform each process step.

Overall Framework and Requirements

The table below lists important reading, which gives detailed information on the TN-ITS framework, primarily from a functional and organizational perspective.

Motivation and purpose	Document reference	Comment
To understand the overall TN-ITS framework and the requirements governing the exchange of safety related data in Europe.	ROSATTE Deliverable D1.2 – Requirements and Overall architecture	This document defines the role Information Provider for the map providers (responsible for the provision of maps). Further it also lists User requirements, Use cases and roles (Chapter 4. Functional viewpoint).
A more technical overview of data exchange according to the TN-ITS framework	ROSATTE Deliverable D3.1 – Specification of data exchange methods.	This document gives a condensed overview of the different components of the service needed for the data receiver. (E.g. chapters: 1.2. ROSATTE data exchange; 3.3. Update types; 4.2. Service requirements)
To understand the whole project and possible challenges in data integration	ROSATTE-D41-Data-integration-methods-v13-final.pdf	This document describes ROSATTE data integration methods from a higher level perspective. (Chapters: 2. Integration of Spatial Data & 4. Data integration within the ROSATTE scope)
To understand the basic architecture of INSPIRE	INSPIRE Network Services Architecture	The ROSATTE deliverables frequently reference the INSPIRE guidelines. The Network Services Architecture includes the service types as mandated by the INSPIRE directive which an enacting authority in many cases needs to consider due to European law. For TN-ITS, the principles for discovery and view services from INSPIRE may be re-used as is, while the data specification and download service was specified uniquely because of specific requirements.

Table 1: Overall Framework and Requirements

Consume Service with Changes

The first step in the receiver's process is to consume the service and download datasets with changes.

Motivation and purpose	Document reference	Comment
To understand TN-ITS service	ROSATTE Deliverable D3.1 – Specification of data exchange methods.	The document describes the service scope, various update intervals, versioning and interface specification (Chapter 8. Service specification). More information, including examples, can be found in the Reading instructions for Data sender - chapter 4 Appendix 1 – REST interface for ROSATTE data.

Table 2: Consume Service with Changes

Transform ROSATTE Changes to Receiving Data Store

Processing of downloaded TN-ITS data consists of the following steps: schema mapping, attribute parsing, location referencing decoding, comparing dataset with receiving data store and integrating changes into the receiving data store.

Related reading for data extraction (schema mapping and location reference decoding) is listed in the table below. Solutions for data comparison and changes integration are receiving data store specific, i.e. these depend on the model, schema and content of the receiving data store and also on the receiver's tools.

Motivation and purpose	Document reference	Comment
To understand the schema of exchanged data needed for schema mapping and attribute parsing	ROSATTE Deliverable D3.1 – Specification of data exchange methods.	This document specifies the content and structure of the exchanged data. Mapped are: encoded Location reference and attributes usable/valuable in regards to receiving data store. (Chapters: 6. Data content specification; 7. Physical exchange format - structure and coding; 10. Appendices - XSD schemas/GML examples).
To understand Location referencing methods and Location referencing decoding	OpenLR-Whitepaper_v1.5.pdf Location referencing fact sheet	This document describes the preferred location referencing method "OpenLR" from a technical perspective. (e.g. location types: Line location, Point along line, Geo-Coordinate) More information, software downloads (decoder) could be found on http://www.openlr.org/ . In addition there is a Location referencing fact sheet available, that describes different methods for location referencing.

<div align="center">Table 3: Transform ROSATTE Changes to Receiving Data Store</div>

Other Readings

Motivation and purpose	Document reference	Comment
A more technical illustration of data integration	ROSATTE-D42-Software-components-for-data-integration-v10.pdf	This document describes software components which support data integration and presents examples of ROSATTE implementations.

<div align="center">Table 4: Other Readings</div>