

PUBLIC CALL FOR TENDER PROJECT TEAM EXPERTS

for the execution of the work called for in the proposed Specific Agreement
SA/CEN/GROW/EFTA/000/2016-03

TN-ITS framework

Introduction

Following the acceptance by the European Commission of a proposal from CEN, as prepared by the CEN/TC 278 Secretariat, funding is available for establishing a team of paid experts, to develop a CEN Technical Specification (TS) for the ROSATTE framework, now renamed to TN-ITS (Transport Network ITS Spatial Data) framework, for exchange of (updates of) ITS spatial road data, in the first place road network attributes, but in addition also road network geometry.

Recruiting these experts has been delegated by the CEN Secretary General to the secretariat of CEN/TC 278, held by NEN.

Task of the project team

The project team is tasked with the following:

1. Bring the ROSATTE specification to the level of a CEN Technical Specification, according to the requirements for such specification, and taking into account the conclusions formulated in eMaPS deliverable D2.32 "Report on standardisation activities of ROSATTE framework" [8].
2. Align the specification with INSPIRE according to the recommendations formulated in the report of the study carried out in the EU-funded project eMaPS on technical alignment of ROSATTE with INSPIRE (eMaPS deliverable D2.41, [9]).

Contractual details

The proposed Project plan is attached. The project plan describes in detail what is expected from the project team, the work plan and milestones and the expertise required for the execution of the task(s).

The experts selected will sign an Agreement with NEN. Applicants should be forewarned that the elapsed time between completion of the deliverables (Annex 1 Section 3.4) and NEN being in a position to issue the payment is at least five months. This will be partly overcome by the fact that CEN and the EC have agreed on the following payment steps:

- Step 0: Pre-financing (25 % of the total budget) - following signature of the Agreement with NEN

- Step 1: Interim payment¹ - subject to the approval of the interim report by the European Commission and EFTA
- Step 2: Final payment² - subject to the approval of the final report by the European Commission and EFTA

Selection procedure

Applicants will be selected by a selection committee, which is composed of:

- the Chair of CEN/TC 278 Intelligent transport systems
- the Convenor of CEN/TC 278/WG 7 TN-ITS
- the Secretary of CEN/TC 278 Intelligent transport systems
- a representative from the CEN Central Management Centre

Experts will be selected ensuring an equal representation of sectors, countries and skills, as well as the expected 'chemistry' within the project team. Additionally the selection will be based on the principle of best value for money, considering the day rate of the expert and the number of days the expert requires to execute the work.

The report of the selection committee on the selection of the experts will be submitted for approval to the European Commission and EFTA prior to the contracting of the experts.

Application procedure

Applications should be submitted using the [attached application form](#) by **28-02-2017**. Applications received after the deadline will not be taken into consideration.

I'm looking forward to receiving your application.

Yours sincerely,

Maarten Peelen
Secretary of CEN/TC 278

¹ Up to 75% of the total budget, reflecting the actual number of man-days spent.

² Up to 100% of the total budget, reflecting the actual number of man-days spent.

SA 2016-03

TN-ITS framework

Project plan

1 CONTEXT

The concept of TN-ITS (Transport Network ITS Spatial Data) evolved from work in the EU-funded project PREVENT/MAPS&ADAS (February 2004 - January 2007) on safety-related road attributes for ADAS applications, and especially from the EU-funded project ROSATTE (January 2008 - June 2010), which aimed at establishing an efficient and quality-ensured supply chain for information on safety-related road attributes, from public authorities to commercial map providers and other road data users, with a focus on changes in the concerned attributes rather than full data sets. This concerns explicitly static road side information, i.e. road attributes that are of a more or less permanent nature, and not dynamic information, for which other channels are being used. The basic thought behind ROSATTE was that for information on changes in static road attributes, the public authorities, who create the changes, are potentially the most efficient and immediate source. If processes and procedures are organised well, they can be a highly trusted source (permitting highly automated integration into ITS digital maps), while the information provided will concern single data points that do not need substantial processing and interpretation (like for big data).

Prerequisites for setting up such a data chain are adequate systems and databases (ICT/GIS), and procedures for data maintenance and quality at road authorities, and an adequate common data exchange infrastructure for extracting and publishing the information on changes (updates), able to cope with the multitude of systems, data models and map specifications that are and will be in use on the side of public authorities across Europe. ROSATTE worked on both topics, and especially developed, specified and tested an exchange infrastructure.

The ROSATTE exchange framework is described in the project deliverable D 31 "Specification of data exchange methods" [1]. The core part of this document provides the specification of a mechanism for data ex-change of road safety information, which consists of the following parts:

- a conceptual specification of the data content (the information model), using UML (packages, class diagrams, attributes, associations and OCL constraints); the data content specification is organised in a number of packages where each package corresponds to a separate subset of the ROSATTE domain;
- a physical exchange format (structure and coding using GML schema) to specify a coding for the various types of data listed under the conceptual model;
- a service specification, using UML class diagrams, in order to facilitate the actual data flow between the various actors within ROSATTE; this service specification is inspired by the INSPIRE network services architecture.

After the project the concept for the ROSATTE data exchange infrastructure was further progressed in the revived Digital Maps Working Group of the eSafety Forum, now named iMobility Forum. In that work the vision developed that it would be beneficial to align the intended data exchange with the existing INSPIRE spatial data infrastructure and services for data publishing and data discovery, and therefore to embed the ROSATTE exchange specification in INSPIRE as an extension for ITS spatial data of the theme Transport Networks (TN), while adding elements that are essential for ITS spatial data but not currently offered by INSPIRE, such as maintenance of the data, quality control and location referencing. This led to the new name TN-ITS for the ROSATTE data exchange infrastructure.

The first version of this proposed action (submitted 28-08-2013, but a response was never received) was made in relation to the "2010-2013 ICT Standardisation Work Programme for industrial innovation" of the European

Commission, second update of 2012 [2], especially section 4 on priority domain "Intelligent Transport", subsection "Required standardisation actions", item "Digital Maps":

"The ESOs are invited to consider the need of producing standards and specifications for to the definition of procedures for ensuring the availability of accurate public data for digital maps and their timely updating. The ESO's are invited to follow-up the progress in this area, including the necessary cooperation between the relevant public bodies and digital map providers, and to address any standardisation requirements stemming from this action, taking into account the results of previous activities (e.g., the research projects ACTMAP, FEEDMAP and ROSATTE). The ESOs are also invited to take into account accessibility issues as mentioned at the e-Inclusion domain."

This version more specifically refers to the "Rolling Plan for ICT Standardisation 2013" of the European Commission, published 4 March 2014 [3], section 3.4.5 "Intelligent Transport Systems", subsection 6.1 "Proposed standards developments", item "Digital Maps":

"There is a need for standards / specifications to steer and manage the integration of accurate (public) road data in digital maps, and their timely updating. Work should be based on the results of the ROSATTE project (7FP) and subsequent activities carried out by the iMobility Forum 'Digital Maps Working Group', and consider a possible alignment with the INSPIRE technical Framework."

and especially to the "Rolling Plan for ICT Standardisation 2015" of the European Commission, published March 2015 [4], section 3.4.6 "Intelligent Transport Systems", subsection D "Proposed new standardisation actions", item Digital Maps, Action 8:

"Standards / specifications to steer and manage the integration of accurate (public) road data in navigation oriented maps, and their timely updating, including a possible alignment with the INSPIRE technical Framework."

Besides alignment with INSPIRE, formal standardisation of the ROSATTE specification is sought through the CEN standardisation process. For this, a preliminary new work item proposal submitted to CEN/TC 278, and Working Group 7 "Geographic Data Files" was revived under the new name "ITS spatial data". The work item was activated September 2014.

In line with and in support of Actions 1.2 and 1.3 of the ITS Action Plan of the European Commission [5], and to enable the Europe-wide roll-out of the TN-ITS data exchange infrastructure, the "Transport Network ITS Spatial Data Deployment Platform" or "TN-ITS" for short has been established, as an association under ERTICO - ITS Europe, gathering all parties constituting the data chain, especially public ITS spatial data providers (road authorities) and ITS spatial data users (map makers and other parties bringing these data by means of applications to the end users). The work of the platform is supported by DG MOVE of the European Commission.

The proposal supports the ITS Action Plan of the European Commission by enabling a common exchange framework for ITS spatial road data including provisions for data maintenance, data quality control and assurance, and location referencing.

The relation of the proposal to the ITS Action Plan is as follows:

Action	Relation	Focus
<p>Action 1.2</p> <p>Optimisation of the collection and provision of road data and traffic circulation plans, traffic regulations and recommended routes (in particular for heavy goods vehicles)</p>	<p>Optimisation of the collection and provision of road data and traffic regulations</p>	<p>primary</p>

<p>Action 1.3</p> <p>Definition of procedures for ensuring the availability of accurate public data for digital maps and their timely updating through cooperation between the relevant public bodies and digital map providers, taking into account the results and recommendations of the eSafety Digital Maps Working Group.</p>	<p>Definition of procedures for ensuring the availability of accurate public data for digital maps and their timely updating through cooperation between the relevant public bodies and digital map providers</p>	<p>primary</p>
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The proposed action contributes to the minimal standardisation that is needed to successfully implement Actions 1.2 and 1.3 of the ITS Action Plan, as far as these concern the collection, availability and provision of static spatial public road data.

It should be noted that there is a marked difference between static and dynamic data. Static data concern all the content in a digital map, which has a more or less permanent character. But even static content may sometimes change. The TN-ITS exchange framework will provide information on such changes, which will then be incorporated in digital maps as (updated) static content. It will become part of the map database. Dynamic content on the other hand is highly volatile (temporary), will be distributed via different communication channels and protocols, and will generally not be integrated into a map database, but stored on top of and in relation to a map database, and will be discarded after use (after the validity time has ended or when superseded by newer dynamic data). For the use of dynamic data in relation to a map database it is highly important that the (static information of the) digital map is up to date.

The ITS Directive [6] provides the legal basis for the ITS Action Plan. On 18 December 2014 the European Commission has adopted the Commission Delegated Regulation (EU) 2015/962, supplementing Directive 2010/40/EU (the ITS Directive), with regard to the provision of EU-wide real-time traffic information services [7]. This Regulation, also known as Specification B, defines rules which will help provide road users across the EU with more accurate, accessible and up-to-date traffic information related to their journeys (Real-Time Traffic Information or RTTI). The Regulation was published on 23 June 2015 in the Official Journal of the European Union. Although the Regulation concerns (highly) dynamic information, it includes as well elaborate rules for the provision of updates of static road data ("road data that do not change often or on a regular basis"). This concerns the data of more permanent nature (as described above), changes of which will generally be included in the digital map databases for ITS applications. The latter is precisely the domain of the TN-ITS exchange framework and the Technical Specification this proposal is addressing.

Meanwhile the TN-ITS framework was implemented in Norway and Sweden under the Transportation Pilot Phase 1, a collaborative effort between the INSPIRE community and the TN-ITS community in the period September 2014/August 2015. The framework is operational in these two countries. Additional pilot implementations will be carried out under the TN-ITS activity in the European Union ITS Platform (EUIP) project under the CEF Multi-Annual Programme, in Finland, Flanders, the UK, Ireland and France, during 2016. Furthermore, implementations in two additional European countries are foreseen for the planned Phase 2 of the Transportation Pilot, envisaged to start October 2015, and to run for one year.

2 OBJECTIVES AND IMPACT

2.1 Objectives

The main objective is to produce a CEN Technical Specification from the ROSATTE deliverable "Specification of data exchange methods" [1], which constitutes the specification for the data exchange framework. For this the following work needs to be performed: (1) to review the ROSATTE specification; (2) to identify any missing elements or shortcomings in the specification; (3) to further enhance the specification; (4) to secure embedding of the specification in the INSPIRE theme Transport Networks; (5) to secure a flexible data content

specification (data dictionary) that can be easily extended with additional data items when needed; and (6) to transform the specification into a CEN Technical Specification.

Another longer-term objective is certainly to transform, in a follow-up action, the CEN Technical Specification, once it has been adopted, to a European Standard, while taking into account acquired experience of initial implementations. The deliverable type CEN Technical Specification is chosen in view of the shorter process, which will enable to have a formal specification document sooner. This is important for providing as soon as possible a formal document to which can be referred in other formal documents. However, in the longer term it may be beneficial for its implementation to have it expressed as a European Standard.

2.2 Relevance

The proposed action will be in support of article 8 "Standards" of the ITS Directive (2010/40/EU) [6], clause 1, which states: "The necessary standards to provide for interoperability, compatibility and continuity for the deployment and operational use of ITS shall be developed in the priority areas and for the priority actions. It especially addresses the Commission Delegated Regulation (EU) 2015/962, published 23 June 2015, supplementing the Directive, addressing the provision of EU-wide real-time traffic information services, and as part of that containing elaborate rules for the provision of updates of static road data, which is precisely the domain of the envisaged TS.

The proposed action will help ITS map providers to secure in the future highly up-to-date and accurate ITS digital maps, which will constitute an essential component for technologies like C-ITS and Automated Driving.

There is a need from the market, especially the (commercial) ITS map providers, to enable this data chain of updates of road attributes, for which this TS will be a cornerstone.

2.3 Indicators

The execution of work in the Project Team will be measured and controlled by the following performance indicators, concerning the aspects effectiveness, engagement of stakeholders and dissemination results:

Effectiveness

- number of experts involved in this activity
- number of meetings organised in relation to this activity
- number of presentations made on the activity to potential users
- number of comments received by type, by percentage accepted or rejected, and by user category
- project progress in relation to the schedule specified in this proposal
- number of draft versions of the deliverables submitted to the technical bodies and relevant users

Engagement of potential users

- involvement of relevant potential users
- analysis of representation of relevant potential users over the duration of the activity
- contributions received from potential users to the work (text inputs, comments to drafts, involvement in discussions, responses to presentations, any other contributions)

Dissemination results

- number of external presentations to the ITS community
- number of presentations and articles at relevant conferences

- liaison with industry and relevant associations over the period of the activity
- the liaison work performed and contributions to other related standards activities

More concretely, the following targets are set per indicator:

1	Effectiveness	target	minimum
1.1	number of experts involved in this activity	5	5
1.2	number of meetings organised in relation to this activity	10	8
1.3	number of presentations made on the activity to potential users	15	10
1.4	number of comments received by type, by percentage accepted or rejected, and by user category	N/A	N/A
1.5	project progress in relation to the schedule specified in this proposal	in time	
1.6	number of draft versions of the deliverable submitted to the technical bodies and relevant users	3	3
2	Engagement of potential users	target	minimum
2.1	involvement of relevant potential users	85%	70%
2.2	analysis of representation of relevant potential users over the duration of the activity	75%	50%
2.3	contributions received from potential users to the work (text inputs, comments to drafts, involvement in discussions, responses to presentations, any other contributions)	15	10
3	Dissemination results	target	minimum
3.1	number of external presentations to the ITS community	4	3
3.2	number of presentations and articles at relevant conferences	4	3
3.3	liaison with industry and relevant associations over the period of the activity	4	3
3.4	the liaison work performed and contributions to other related standards activities	N/A	N/A

2.4 Impact

The proposed action will ensure that the current ROSATTE specification will be enhanced and extended as needed, while taking into account the need for extensibility of the data dictionary (the information model), and that the result will solidified into a CEN TS.

The proposed action will be in support of article 8 "Standards" of the ITS Directive [6], clause 1, which states: "The necessary standards to provide for interoperability, compatibility and continuity for the deployment and operational use of ITS shall be developed in the priority areas and for the priority actions. To that effect, the Commission, after having consulted the Committee referred to in Article 15, shall request the relevant standardisation bodies in accordance with the procedure laid down in Directive 98/34/EC to make every necessary effort to adopt these standards rapidly."

In addition, the proposed action will meet the related need for standardisation as identified in [2], [3] and [4] (see above under section 4, fifth paragraph).

The proposed CEN TS will secure European harmonization of the exchange of information on road attributes from public road authorities to digital map makers and other users, while safeguarding the continued use of existing legacy solutions for data maintenance and storage on the side of public road authorities.

Indirectly the development of the CEN TS will help to promote active involvement of public road authorities and map makers in TN-ITS, and cooperation between the different actors.

2.5 SMEs, consumer organization and environmental and societal stakeholder representation (Art. 17(4) (b) of standardization regulation No 1025/2012) example– Annex III organizations (ECOS, ETUI, ANEC, SBS)

According to the method of operation of CEN, based upon a network of national standardisation bodies, is geared towards involving all parties concerned, including SMEs and societal stakeholders.

The following European stakeholder organizations are member of CEN/TC 278

- ANEC, the European Consumer Voice in Standardization
- ECOS, the European Environmental Citizens Organisation for Standardisation
- SBS, Small Business Standards

As member of CEN/TC 278 they can participate in CEN/TC 278 and its Working Groups and have access to all CEN/TC 278 documents.

3 DESCRIPTION OF THE TASKS

3.1 Introduction

The proposed task is singular: the development of a CEN Technical Specification (TS) for the ROSATTE framework, now renamed to TN-ITS framework, for exchange of (updates of) ITS spatial road data, in the first place road network attributes, but in addition also road network geometry.

3.2 Scope

The scope of the work concerns the existing ROSATTE exchange specification, which is described in deliverable D3.1 of the EU-funded project ROSATTE [1]. The work includes the following elements:

1. Bring the specification to the level of a CEN Technical Specification, according to the requirements for such specification, and taking into account the conclusions formulated in eMaPS deliverable D2.32 "Report on standardisation activities of ROSATTE framework" [8].
2. Align the specification with INSPIRE according to the recommendations formulated in the report of the study carried out in the EU-funded project eMaPS on technical alignment of ROSATTE with INSPIRE (eMaPS deliverable D2.41, [9]).

The ROSATTE data exchange framework can be described as follows (adapted after [1]). The basis of the ROSATTE data exchange is an information model (or data content specification). This provides the conceptual schema which enables correct encoding, and decoding, interpretation and understanding of transferred data. Concerning road safety information, this information model defines and describes inter alia the following elements of the ROSATTE exchange framework:

- road safety feature;
- geographic location;

- data supply mode (full initial data supply or updates).

The specification of the physical exchange format represents a translation of the ROSATTE information model into an implementation specification suitable for data exchange.

Figure 1 depicts the conceptual explanation of the data exchange process. ROSATTE compliant data supply from a public road authority data store requires that its internal information model is properly mapped, on a conceptual level, to the ROSATTE information model. This conceptual mapping and the physical exchange format specification allow conceptual and physical transformation of the data from the public road authority data store into a ROSATTE data set for exchange with the data users (map makers and other parties). The ROSATTE compliant data set can be requested by a data user and downloaded through a web service, for decoding, interpretation, validation and integration into its map database.

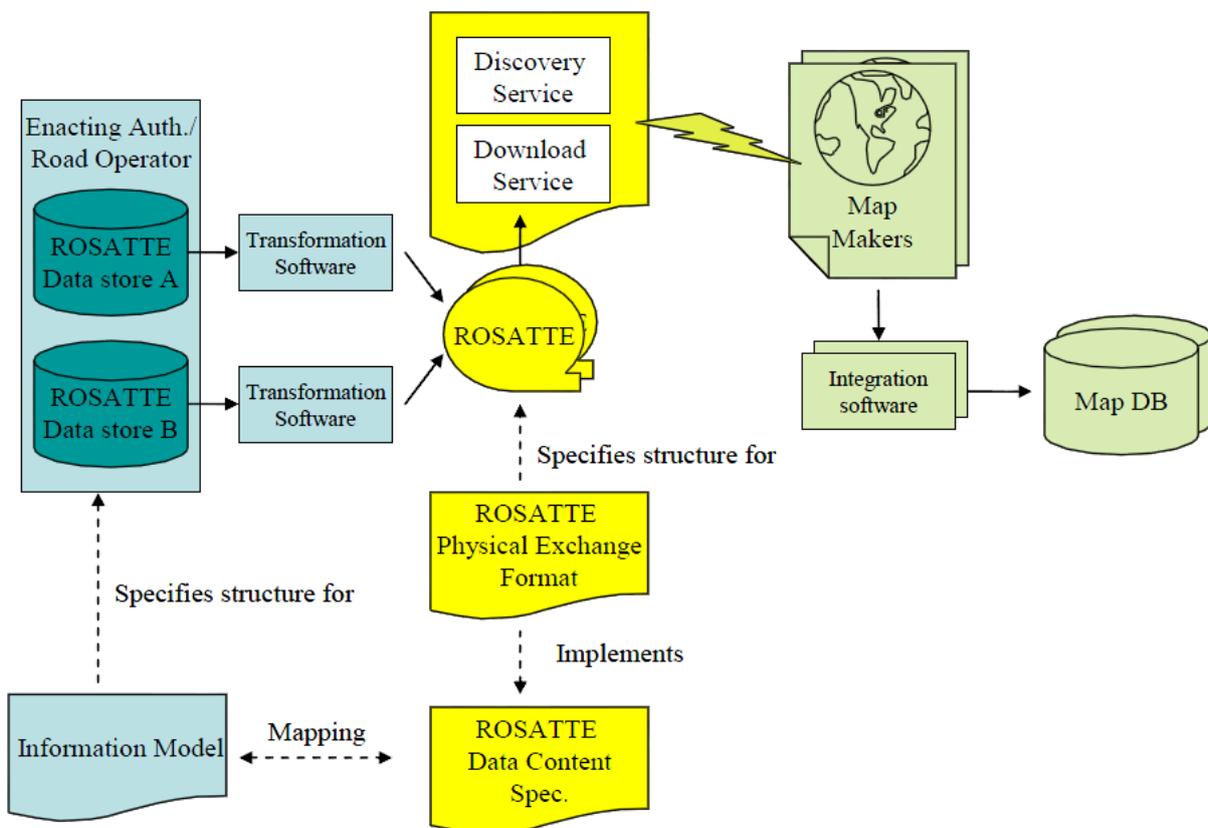


Figure 1 - Conceptual and concrete levels of the ROSATTE data exchange framework [1]

As stated before, extension of the information model with other attributes than mere safety attributes, and with geometry elements, as well as flexibility of the information model for future extensions, need special attention.

3.3 Work plan & Milestones

3.3.1 Work plan and responsibilities

The Project will be carried out based on a work plan comprising a set of well-defined tasks. Dependent of the topic of a task, responsibility for the task is assigned to one of the experts, as indicated in the list of tasks. Despite this, it is expected that each of the experts will have sufficient knowledge and expertise to be able to substantially contribute to each of the tasks. In view of this it is expected that the Project Team as a whole will

closely cooperate for the work on all tasks. The final responsibility for the project as a whole is with the Expert 1 (project leader).

The expected competences of the five experts of the Project Team are: (1) Project leader; (2) Project editor; (3) Geographic data standards; (4) INSPIRE; (5) Location referencing. For a detailed description, see section 7.6.1 - Project Team.

3.3.2 The tasks of the work plan

The work plan has the following tasks:

Project management

Overall management of the project, monitoring of the work plan, time schedule and the milestones, organisation of the work within the Project Team, organisation of Project Team meetings. Expected outcome: Smooth performance of the project, within the indicated time frame, and producing the indicated results. Main responsible: Expert 1 (project leader).

Transformation of ROSATTE specification to CEN TS

Review the ROSATTE document "Specification of data exchange methods" [1], and extend and/or adapt the specification with elements needed to make the specification fulfil the requirements for a CEN Technical Specification, taking into account the conclusions formulated in eMaPS deliverable D2.32 [8]. Expected outcome: first draft of TS, with content largely similar to the ROSATTE specification. Main responsible: Expert 2 (project editor).

Alignment with INSPIRE

Align the specification with INSPIRE following the recommendations formulated in eMaPS deliverable D2.41 [9]. Report on the actions taken to perform the alignment. Expected outcome: results will be reflected in the working draft of the specification; a concise internal report on the actions taken to perform the alignment will be prepared. Main responsible: Expert 4 (INSPIRE).

Review of information model

Review the information model. More in particular, elaborate the flexibility of the information model for future extensions, and where needed, adapt the model; and elaborate the possibility to include geometry, not in terms of location referencing, but as objects for exchange, in the information model. Expected outcome: results will be reflected in the working draft of the specification; a concise internal report on the actions taken to adapt the information model will be prepared. Main responsible: Expert 3 (geographic data standards).

Review of location referencing

Review the status of location referencing methods, taking into account results of the testing in the ROSATTE project, as well as other relevant inputs; especially look at map-based location referencing versus linear referencing; review the flexibility of the specification for adopting different location referencing methods, including integration of map-based and linear referencing. Make changes and/or additions to the specification as needed. Expected outcome: results will be reflected in the working draft of the specification; a concise internal report on the actions taken to implement the results will be prepared. Main responsible: Expert 5 (location referencing)

Review of physical exchange format

Review the physical exchange format, also in relation to the results of the abovementioned actions, and adapt and/or extend where necessary. Expected outcome: results will be reflected in the working draft of the specification; a concise internal report on the actions taken to implement the results will be prepared. Main responsible: Expert 3 (geographic data standards).

Review of service specification

Review the service specification, taking into account the results of the tests in the ROSATTE project, and the results of the abovementioned actions, especially the alignment with INSPIRE, and extend and/or adapt where necessary. Expected outcome: results will be reflected in the working draft of the specification; a concise internal report on the actions taken to implement the results will be prepared. Main responsible: Expert 4 (INSPIRE).

Produce draft Technical Specification

Taking into account the results of the foregoing actions, produce a draft CEN Technical Specification, and submit this document for TC review. Expected outcome: draft CEN TS. Main responsible: Expert 2 (project editor).

Comments resolution

Perform the comments resolution, discuss as necessary with relevant stakeholders, and especially with CEN/TC 278/WG 7, TN-ITS WG 2 and the INSPIRE SDIC. Prepare the final draft TS and submit to the TC for formal vote. Expected outcome: Comments resolution document, and final draft TS. Main responsible: Expert 2 (project editor).

Interact with CEN/TC 278/WG 7

In all of the above activities, interact closely with WG 7; in addition also interact closely with TN-ITS WG 2 and the INSPIRE SDIC, taking guidance for the process from eMaPS deliverable D2.32 [8]. Expected outcome: efficient coordination with the mentioned bodies. Main responsible: Expert 1 (project leader).

Liaison with stakeholders and other relevant standards bodies

Liaise with stakeholders, and especially relevant standards bodies. In any case, liaisons will be set up and maintained with the Joint Research Centre (custodian of INSPIRE), the European Commission (DG CONNECT and DG MOVE; in view of the relation of this work to the ITS Action Plan and the ITS Directive); ISO/TC 211 and CEN/TC 287 (base standards for geographic information); ISO/TC 204/WG 3 (ITS database technology; especially concerning location referencing; also in view of the WG 3 PWI "Shareable Geospatial Databases"). Expected outcome: efficient coordination with the mentioned bodies. Main responsible: Expert 1 (project leader).

Dissemination activities

During the whole duration of the project, dissemination of the ongoing work, its purpose and the progress will be performed to make relevant stakeholders aware of this development, to explain its purpose and details, and to invite them to provide inputs. This activity will mainly be carried out in the form of presentations at relevant events, and of articles in relevant magazines. Expected outcome: an adequate level of dissemination activities. Main responsible: Expert 1 (project leader).

3.3.3 The milestones of the work plan

The timetable for the milestones will be as follows:

Milestone (WG 7 = CEN/TC 278/WG 7 - TC = CEN/TC 278)	due1
Signature of contract between CEN and the EC	S
Signature of contract with Project Team (following call for and selection of experts)	S+4
Work plan for the Project Team	S+4
First draft TS submitted to WG 7 (based on conversion existing spec)	S+5

¹ Numbers indicate months from the signature of the contract between CEN and the EC.

Second draft TS submitted to WG 7 (including results review and alignment)	S+7
Comments of WG 7 on second draft TS	S+8
TC for review draft (taking into account WG 7 comments) (Interim report)	S+9
Result of TC review	S+10
Final draft ready for Formal Vote	S+12
Launch Formal Vote	S+15
Approved TS	S+18
Published TS (final report)	S+21

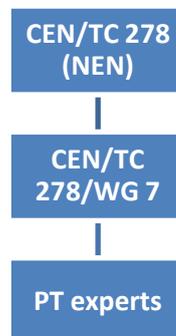
3.4 Deliverables

The deliverables are defined as follows:

- Interim report (S + 9 months)
in the form of a progress report describing the work performed so far and the TC review draft.
- Final report (S+21 months)
in the form of a final report including the published CEN Technical Specification

4 Execution of the different tasks - Structure and Resource Requirements

4.1 Organisation & relationships



For this project CEN/TC 278 will establish a Project Team (PT). The work of the PT will be monitored for its content by CEN/TC 278/WG 7 "Geographic Data Files".

One of the PT experts will be given the role of the PT leader. Beyond the formal reporting tasks, the PT leader will be responsible for moderating the work in the PT in order to achieve reasonable consensus inside the PT. The PT leader will act as interface to the parent body CEN/TC 278/WG 7.

The work will be carried out in close co-operation with the parent body of the PT, CEN/TC 278/WG 7, which will act as a steering committee for the PT. The convenor of CEN/TC 278/WG 7, assisted by the PT leader, will report to CEN/TC 278. Communications and liaisons with related SDOs will be directly managed by the PT leader.

During the work, liaisons with relevant organisations will be developed and maintained. This concerns especially but is not limited to ISO/TC 211 and CEN TC/287, CEN/TC 278 and ISO/TC 204, the INSPIRE community, the European Commission (DG MOVE and DG JRC), and TN-ITS.

The PT will provide results in the steps presented above. These results are for discussion at the parent body (CEN/TC 278/WG 7), but will also be shared with other relevant standards bodies, with which the PT will set up liaison relationships. Feedback to the PT is expected in order to improve the deliverable.

After a final quality checking process by CEN/TC 278/WG 7, the final version of the deliverables provided by the PT will be forwarded to CEN/TC 278 for the respective approval and publication steps.

As part of the dissemination activities, the PT will present its results to interested parties on the public website of CEN/TC 278, at www.itsstandards.eu.

4.2 Subcontracting to external organizations

4.2.1 Project team (PT)

The drafting of the documents requires specialized expertise which is not available to standardization managers as permanently employed by CEN and its members (national standard bodies). This is the justification for the Commission financial support.

To employ such specialized experts by a CEN member would be expensive and not economically viable considering the very specific area of specialization that is required for the execution of this contract. To engage the services of the appropriate specialist experts from the market is more cost-effective. This sub-contracting also enables the quick availability of the drafts to enter the consensus building and validation processes, which are CEN's core business.

The management and administration of the consensus building and validation process with the aim to publish the end results as a standards deliverable is the responsibility of the CEN National Standards Body, in this case NEN.

CEN has a standard method to select specialised experts which are called Project Teams. Project Team experts are selected by a selection panel from the applications received as a result of an open Call for Experts. The open call refers to the expertise required for being eligible for participation in the Project Team.

The expertise required for the PT experts concerns knowledge of and/or experience in:

- ISO/TC 204 standard 14825 "Geographic Data Files"
- the work conducted in the EU-funded projects PReVENT/MAPS&ADAS, EuroRoads and especially ROSATTE
- the ROSATTE deliverables, and especially of deliverable D 31 "Specification of data exchange methods"
- map-based location referencing, especially of:
 - the AGORA-C specification,
 - ISO/TC204 standard 17572 "Location referencing for geographic databases", Part 1 "General requirements and conceptual model" and Part 3 "Dynamic location references"
 - the OpenLR specification
- linear location referencing, especially of:
 - ISO/TC211 standard 19148 "Linear referencing"
- other relevant ISO/TC 211 "Geographic information" standards, like 19103 Conceptual schema language, 19108 Temporal schema, 19109 Rules for application schema, 19115 Metadata, 19136 Geography Markup Language (GML)

- UML (Unified Modelling Language)
- relevant INSPIRE specifications and guidelines, especially:
 - Generic Conceptual Model (D2.5)
 - Guidelines for the encoding of spatial data (D2.7)
 - Data Specification on Transport Networks - Draft Guideline (D2.8.1.7)
 - Network Services Architecture (D3.5)
 - Draft Implementing Rules for Discovery and View Services (D3.7)
- Representational State Transfer (REST) and Simple Object Access Protocol (SOAP)
- ISO/TC 204 standard 21707 "Integrated transport information, management and control - Data quality in ITS systems"

Five roles, each with a specific task, have been defined to carry out the requested work. The same person can perform more than one role. Roles can also be divided between experts. The maximum number of man-days available for this project is 210.

The roles and required expertise for each role are defined as follows:

Role	Required expertise
Expert 1 - Project leader	project management experience in standardisation processes general knowledge of ROSATTE specification general knowledge of the related standards
Expert 2 - Project editor	standardisation procedures CEN Internal Regulations Part 3 (Rules for drafting of CEN deliverables) experience in CEN and ISO <i>experience in standardisation processes</i> general knowledge of ROSATTE specification general knowledge of the related standards
Expert 3 - Geographic data standards	ISO/TC 211 suite of standards ISO/TC 204 GDF standard GML, XML, Metadata, UML ROSATTE specification relevant quality aspects for data exchange general knowledge of ROSATTE specification general knowledge of other related standards
Expert 4 – INSPIRE	INSPIRE framework relevant INSPIRE specifications web service architectures SOAP and REST relevant quality aspects for data exchange general knowledge of ROSATTE specification general knowledge of other related standards
Expert 5 - Location referencing	relevant ISO standards linear location referencing map-based location referencing AGORA-C and OpenLR specifications relevant quality aspects for location referencing

	general knowledge of ROSATTE specification general knowledge of other related standards
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A balanced composition of the different stakeholders (balanced in terms of background, representation, nationality (if applicable)) is preferred.

In accordance with the existing rules for the selection of Project Team experts, the selection panel for this Project Team will consist of the Chair and the Secretary of the Technical Committee, and of a CCMC staff member as the representative of CEN.

It is estimated that a total of 210 man days are needed for the project team to perform the work. The expert's day rate will include travel expenses as well.

4.2.2 Travel

The project team will have physical and online meetings. The number meetings will need to be determined by the Project Team at the kickoff meeting. It is anticipated that at 2-4 physical meetings, including the kickoff meeting, will be necessary.

Annex A

Acronyms

ADAS	Advanced Driver Assistance Systems
AGORA-C	Method for map-based or dynamic location referencing (the C stands for "compact")
CEN	European Committee for Standardization (acronym from the French name: Comité Européen de Normalisation)
CEN/TC 278	CEN TC for Intelligent transport systems
CEN/TC 287	CEN TC for Geographic Information
DG	Directorate-General
DG JRC	Joint Research Centre, a DG of the European Commission, the technical custodian of INSPIRE
DG MOVE	Directorate-General for Mobility and Transport, a DG of the European Commission
EC	European Commission
ERTICO	ITS Europe (European Road-transport Telematics Implementation Coordination Organisation)
ESO	European Standardisation Organisation
GIS	Geographic Information System
GML	Geography Markup Language
INSPIRE	Infrastructure for Spatial Information in the European Community, in the first place established for the environmental sector
ICT	Information and Communication Technologies
ISO	International Standards Organisation
ISO/TC 204	ISO TC for Intelligent transport systems
ISO/TC 211	ISO TC for Geographic information/Geomatics
ITS	Intelligent Transport Systems
MAPS&ADAS	Sub-project of PREVENT, focusing on (1) safety-enhanced digital maps, and (2) a standard interface for ADAS to digital map data (the ADAS Horizon).
NEN	NSO of The Netherlands
NSO	National Standardisation Organisation
OCL	Object Constraint Language (part of the UML standard)
OpenLR	Open Location Referencing, method for map-based or dynamic location referencing
PREVENT	Preventive and Active Safety Applications. EU-funded Integrated Project (IP) under the 6th Framework Programme. Start February 2004, duration 4 years.
PT	Project Team
ROSATTE	Road Safety Attributes Exchange Infrastructure in Europe. EU-funded project, running January 2008 - June 2010, developed the ROSATTE or TN-ITS specification.

SDO	Standards Developing Organisation
TC	Technical Committee, body within and international standardisation organisation, focusing on a specific technical domain
TN-ITS	Transport Network ITS Spatial Data Deployment Platform, a members association under ERTICO to foster the implementation of the timely exchange of information on updates of road attributes between public road authorities and providers of map databased for ITS
TS	Technical Specification (CEN normative document)
UML	Unified Modelling Language

Annex B References

- 1) Wikström, L. (ed.), et al., "Specification of data exchange methods", ROSATTE Consortium, deliverable D31, version 16 (final), 31 August 2009.
- 2) European Commission, DG Enterprise and Industry, "2010-2013 ICT Standardisation Work Programme for industrial innovation", second update, Brussels, 2012.
- 3) European Commission, DG Enterprise and Industry, "Rolling Plan for ICT Standardisation 2013", Brussels, 4 March 2014.
- 4) European Commission, DG Enterprise and Industry, "Rolling Plan for ICT Standardisation 2015", Brussels, undated, apparently published March 2015.
- 5) Commission of the European Communities, "Action Plan for the Deployment of Intelligent Transport Systems in Europe", Communication from the Commission, Brussels, 16 December 2008, second corrected version of 20 March 2009, document COM(2008) 886 final/2. Generally referred to as the "ITS Action Plan".
- 6) European Parliament and Council of the European Union, "Directive 2010/40/EU on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport", Brussels, 7 July 2010. Generally referred to as the "ITS Directive".
- 7) European Parliament and Council of the European Union "Commission Delegated Regulation (EU) 2015/962 of 18 December 2014 supplementing Directive 2010/40/EU of the European Parliament and of the Council with regard to the provision of EU-wide real-time traffic information services, Official Journal of the European Union, Brussels, 23 June 2015. Also generally known as Specification B.
- 8) Wevers, K., Hovland, T., "Report on standardisation activities of ROSATTE framework", 31 October 2013, eMaPS Consortium, deliverable D2.32.
- 9) Wikström, L., Svensk, P., "INPIRE Alignment - A study on how to align ROSATTE with INSPIRE on a technical point of view", 15 May 2013, prepared for the eMaPS Consortium by Triona AB, Borlänge, Sweden, eMaPS Consortium, deliverable D2.41.