Transport Network ITS Spatial Data Deployment Platform

Report of the President to the General Assembly of 4 June 2015

Introduction

TN-ITS, the Transport Network ITS Spatial Data Deployment Platform was founded nearly two years ago at its inaugural General Assembly meeting in Dublin, 5 June 2013, held in connection to the 2013 ITS European Congress. This report is presented on the occasion of the 2015 General Assembly meeting, to be held on 4 June 2015 at ERTICO in Brussels.

According to the Terms of Reference, the objective of TN-ITS is "to give support, on a permanent basis, for the implementation of priority actions 1.2 and 1.3 of the 'Action Plan for the Deployment of Intelligent Transport Systems in Europe' of the European Commission (for short 'ITS Action Plan') of 16 December 2008, as published in document COM(2008) 886 final/2 of 20 March 2009 (corrigendum to the original document)."

This can be translated into the following more operational mission statement: "to facilitate and foster, throughout Europe, the digital maintenance of ITS-related spatial data at public road authorities, the immediate exchange of such data between public road authorities as data providers, and map makers and other parties as data users, and the timely integration of such data on the side of ITS map providers".

The basic idea behind the concept is simple and straightforward. ITS applications using map data evolved over time from navigation via advanced driver assistance systems to co-operative systems, while in recent years the next stage appeared on the horizon: automated driving. Along the line of this development, the requirements for the map data have been gradually increasing. Apart from topics like richness and accuracy of the content, it is increasingly important that the map database is highly up-to-date. At the same time, it is difficult for ITS map providers to keep their maps up-to-date, even though they use a multitude of sources.

As the public road authorities create the changes in road attributes, they would in principle, given adequate digital systems for data maintenance, be the most efficient source for providing immediate and complete information concerning changes in road attributes, on a continuous basis. While the original focus was on information related to traffic signs, the concept can be easily extended to other types of road infrastructure information and even geometry elements (and the exchange specification is flexible for extension with such types of information). If well organised, the TN-ITS updates constitute information from a trusted source, consisting of single data points (no big data processing needed) with immediate availability. The steadily increasing interest in automated driving points to an even more important role for (and hopefully an increasing interest in) the TN-ITS data exchange in the near future.

The Platform derives from solid work done in the ROSATTE project, which ran from January 2008 until June 2010. In this project the three parts of the intended data chain were successfully implemented and trialled in several test sites across Europe. The three parts concern data maintenance on the side of authorities, a proper exchange mechanism, and

data integration at ITS map providers. Already during the project the idea was developed for an international platform, to foster adoption and roll-out of the concept across Europe. This idea was further developed in the period September 2011 until June 2013, by the eMaPS support action, in close cooperation with the revived Digital Maps Working Group of the iMobility Forum, and it led to the foundation of TN-ITS in June 2013.

Membership

The platform was established in 2013 with eight founding members, one regional and five national public road authorities (Norway, Sweden, Finland, Flanders, Ireland and the UK), and two ITS map providers (Nokia/HERE and TomTom). The expectation was that from then on membership would gradually grow. In a September 2013 Board meeting, the goal was formulated to have two additional members for 2014. Since the foundation of TN-ITS, substantial efforts have been made to convince additional EU Member States to join the wagon.

At the beginning of 2014, there was a sign that two additional Member States would join, but unfortunately, this did not materialise, as was already somehow apparent at the previous General Assembly. Also in the second half of 2014 and in the first months of this year, no progress was made on bringing in additional public authorities, despite further efforts.

We firmly believe that the intended data chain is a useful concept that will bring substantial benefits to the parties involved (public road authorities and ITS map providers) as well as to the public in general. In addition we are convinced that the TN-ITS platform has the potential to become a key enabler for the roll-out of the data chain concept across Europe. But to develop TN-ITS as a solid platform that brings something to its members, a substantial increase of the membership base is a must.

The Board has discussed this issue, and a measure will be proposed to the General Assembly that hopefully will help to progress membership during the rest of this year and 2016.

Working groups

Already when the idea for the platform was developed during the ROSATTE project, its five Working Groups were defined. Four of the five Working Groups (WGs) are currently active.

WG 1 - Location Referencing. This year, four conference calls were held. There was substantial participation in the calls, but limited contribution to the discussion, the calls mainly served exchange of information. The WG Plan had defined four deliverables, but work on this did not make substantial progress. Concerning the status of the methods: the licensed AGORA-C has little chance to survive. Fraunhofer's ULR was adopted by one of the German broadcasters. OpenLR so far is the only method that is reasonably successful. It is used in the Transportation Pilot (see below). The TN-ITS specification is open for different methods (container approach), and also for linear referencing. The WG now plans to combine the intended four deliverables into one.

WG 2 - Specifications and Standardisation. WG 7 of CEN was revived, and the Preliminary Work Item was activated in September. This took some effort in terms of arranging sufficient supporting experts (in a formal sense) in different countries. A WG 7 meeting by conference call was held in October. Since then, the work has not yet substantially progressed. A plan is made however, to move this topic quickly forward in the weeks following this General Assembly. A Project Team proposal for EC funding was submitted early in the year via the Dutch Standardisation Institute NEN to CEN, but is still pending as of today. This is due to a delay for approval of the new five-year funding framework for this type of

proposals at the Commission. DG Growth is in the lead for this, and this activity is earmarked in the Rolling Programme for ICT Standardisation.

WG 3 - Implementation Support. The WG successfully produced a solid document named "TN-ITS Implementation Support". This was circulated to the members and presented and extensively discussed at the Joint WG meeting of 29 January 2015. The report still needs to be finalised. The document gives an overview of the steps needed for implementing a TN-ITS compliant data exchange. These (eight) steps and the overarching topic Quality Assurance together constitute a Generic Process Flow from maintenance of data at data senders (public road authorities) to publication of map updates at data receivers (ITS map providers). The document indicates for each of the steps the elements that are needed to provide a support package for (new) members that have to start TN-ITS implementation, in terms of implementation guidelines, tools and demo kits and expert support including options for its financing. The document clearly points to material already existing, and identifies where elements are missing and need to be developed.

WG 4 - Generic Tools and Reference Implementation. This WG has not yet become active.

WG 5 - Policy, awareness and dissemination. In the framework of this WG quite a number of presentations were given through the year on various occasions; the web site was improved; and the TN-ITS documents Fact Sheet and Policy paper were updated and republished.

At the ITS European Congress in Helsinki the 2014 General Assembly meeting was organised. At the Helsinki Congress also a congress session was held that focused on the Transportation Pilot, INSPIRE and TN-ITS, with the title "TN-ITS and INSPIRE team up on ITS spatial data". It was organised as a joint session by video link with the INSPIRE Congress, held in the same week in Aalborg, Denmark.

It was realised that the work of the WG needs some focus on communication to non-experts from the wider ITS domain, to raise support from governments. Work needs to be done the coming period on a communication strategy for raising awareness.

At the end of last year, the Board discussed its observation that the working groups are running at a slow pace. Members are attending conference calls, however results are limited (with some good exception). Most of the efforts are initiated from the WP leaders. Despite this observation, the Joint Working Group meeting organised on 29 January 2015 at ERTICO raised substantial interest and saw a high turnout, a range of good presentations, active participation and interesting discussions and debate.

Board

The Board is composed of the elected President, the ERTICO representative who has ex officio the role of Secretary, the Treasurer, the five Working Group leaders, and three representatives from other associations, respectively DG MOVE, ITS Nationals and CEDR. The Board had two physical meetings in 2014 (21 January and 16 December, both held at ERTICO), and a range of regular short meetings by conference call. At the General Assembly of 17 June 2014 the Treasurer (a representative of HERE), the WG 4 Leader (a representative of DTTaS), the representative of CEDR, and the new representative (and Chair) of ITS Nationals were appointed. Also the previous representative (and previous Chair) of ITS Nationals was re-appointed as a regular additional Board member.

European Commission

TN-ITS has been and is supported by the European Commission. The technology and concept of the Platform draws upon previous work in the EU-funded projects, as well as in two

occurrences of the Digital Maps Working Group in respectively the eSafety Forum and the iMobility Forum (2005 and 2011/2013). The concept had from the very beginning an explicit link to the ITS Action Plan, priority actions 1.2 and 1.3. Currently TN-ITS has strong support and guidance from the ITS Unit of DG MOVE, who is represented in the Board. The ITS Unit initiated and guided the development of the set of specifications for priority action B under the ITS Directive, namely the Delegated Regulation on the provision of EU-wide real-time traffic information services (RTTI). Although the title of this Specification (b) seems to point to dynamic information, it covers as well the static map-related information which is the focus of TN-ITS. Specification (b) was adopted by the European Commission on 18 December 2014, and transmitted to the Council and the European Parliament for their right of scrutiny. The Delegated Act will apply from 24 months after its entry into force. This is a really important development in support of the concept of TN-ITS, while TN-ITS has also provided its contribution to the related discussions.

In addition, TN-ITS has strong support from the European Commission's Joint Research Centre (JRC). The JRC is the technical custodian of INSPIRE. The TN-ITS specification, which is in the process of being transformed to a CEN Technical Specification, is highly aligned, in a technical sense, with INSPIRE, and the idea is that the provision of TN-ITS type spatial data will be set up in Member States as an integral part of the INSPIRE framework that is being set up anyway. The JRC, as representative of the INSPIRE community, and TN-ITS have teamed up in the Transportation Pilot (see the next item).

Transportation Pilot

INSPIRE is the infrastructure for spatial information in Europe that was established to support Community environmental policies. The JRC is acting as the overall technical coordinator of INSPIRE. The JRC has taken the initiative to set up several pilots to demonstrate the potential value of INSPIRE for other sectors than the environmental sector, and the transport sector is one of the targeted sectors (the others being the maritime and the energy sector). For this reason the JRC, through its EULF (European Union Location Framework) project, has teamed up with TN-ITS to set up what has been named the Transportation Pilot. Another partner in this effort is the EU-funded ELF (European Location Framework) project, which is building a pan-European cloud platform and web services using INSPIRE, to enable access to harmonised data in cross-border applications.

After due preparations, Phase 1 of the Pilot started in September 2014. Actively involved TN-ITS members are the Norwegian Public Road Administration (NPRA), the Swedish Transport Administration (Trafikverket), and the ITS map providers HERE and TomTom. In this Phase, the existing TN-ITS service in Sweden was extended and enhanced, while a new TN-ITS service was implemented in Norway. The two ITS map providers further integrated the intake of TN-ITS updates into their production environment, in such a way that it is suitable for future use with TN-ITS updates from other Member States. With some delay, Phase 1 is close to its completion. With respect to TN-ITS, Sweden and Norway belong to the most advanced Member States in Europe. The plan for the intended Phase 2 is to set up a similar service in two other Member States that are less advanced in terms of TN-ITS. The partners will report at the 2015 ITS World Congress in Bordeaux on the results of the Pilot.

CEF proposal

TN-ITS has submitted a proposal for a small pilot TN-ITS implementations in five Members States: Finland, Belgium/Flanders, the UK, Ireland and France. Other partners in the pro-

ject are the ITS map providers HERE and TomTom (for the other part of the data chain), and ERTICO/TN-ITS as coordinator. The project was submitted as a sub-proposal of the EUIP proposal (EU ITS Platform). If granted, the project would start 1 January 2016, and last for one year. The decision to submit a proposal was only taken at the December Board meeting, where the DG MOVE representative had pointed to this possibility. Despite the short time frame (proposal deadline 26 February) the submission was successful, inter alia due to the support from the side of the EUIP proposal coordinator. It will be tried to closely coordinate the possible CEF project with the intended Phase 2 of the Pilot, as the goals are much in line.

Finance

Much of the work in TN-ITS is based on in-kind contributions from the members, in terms of participation to the activities and providing contributions. The costs for the hours of the TN-ITS staff (President and Secretary, both involved on a part-time basis) and additional travel and miscellaneous costs are kept at a minimal level. These costs are in principle to be covered by membership fees (according to the Terms of Reference TN-ITS is a self-funding partnership). ERTICO covers part of the membership fee of its partners that are a member of TN-ITS, while the NPRA had agreed to support TN-ITS with a similar contribution for 2103 and 2014, to help the Platform in its start-up phase. The contributions of ERTICO and the NPRA both amounted to EUR 20,000 for 2014. The eight regular members paid each a membership fee of EUR 4,000. In addition, there is some income from the four supporter members. The extraordinary support of the NPRA came to an end at the end of 2014, while the ERTICO contribution (in respect of the fee of its members) will likely continue at the same size. As the membership base has not increased in 2014, this puts some pressure on the organisation of the activities. However, some additional funding was acquired from the JRC in the framework of the Transportation Pilot, and some additional funding from ERTICO for the time spent on the preparation of the CEF proposal. This will help TN-ITS to properly continue in 2015. For Phase 2 of the Transportation Pilot again some additional funding from the JRC may be available for the 2015/2016 time frame, while for 2016 the funding coming from the CEF project, if granted, will also contribute to the continuation of TN-ITS in 2016.

Conclusion

In conclusion it can be said that, despite some reasons for concern, substantial progress was made in 2014, and that the prospects for further progress in 2015 and 2106 look positive.

The rationale for the existence of TN-ITS is clearly a sufficient number of members finding it useful to team up for this important topic, to be active in TN-ITS and its Working Groups, and to support and learn from other members concerning implementation. The size of the membership has made little progress in 2014. For the continuity of the Platform, in terms of both its financing, and giving the Platform body and making it sufficiently interesting for members to be part of it, a substantial membership base is required. It should be kept in mind though, that rolling out TN-ITS across Europe is a longer-term effort. Another concern is the delay in progressing with the standardisation at this moment.

But there are certainly positive developments. The Transportation Pilot has delivered two solid data chain implementations for TN-ITS updates between Norway and Sweden on one site, and the two ITS map providers on the other side. A proposal has been submitted for a CEF project, which, if granted, will deliver in 2016 pilot TN-ITS implementations in five

more Member States, which will be tested with in combination with the TN-ITS infrastructures now firmly set up at the ITS map providers. In addition, the intended Phase 2 of the Transportation Pilot plans for two more Member States. Two Board Members have a firm plan to now progress quickly with the standardisation. The current membership is positively involved with TN-ITS, and the four Member State members not yet having a TN-ITS implementation are part of the CEF proposal.

The Board acknowledges the great support and the invaluable contributions from DG MOVE and DG JRC, as well as from the members of TN-ITS. This support is an important contribution to the efforts to make TN-ITS a success.