Reporting by the Member States referred to in Article 17 of Directive 2010/40/EU_Final

Information on national ITS –actions in Sweden

2014-08-27

Innehåll

A)	DESCRIPTION OF THE NATIONAL STRATEGY ON THE DEVELOPMEN	NT
	AND DEPLOYMENT OF ITS	3
	New ITS Strategy and Action Plan	3
	Implementation of the ITS Directive 2010/40 / EU - work with delegated acts	34
	Autonomus driving	4
B)	DESCRIPTION OF THE TECHNICAL AND LEGAL FRAMEWORK	
	APPLICABLE TO ITS	5
	The Swedish legal framework – Adoption of the Directive 2010/40/EU	5
	Data Base for national and local traffic regulations (RDT)	5
	Legal aspects of autonomous driving	5
	Alco- lock technology	6
	Road tolls	6
	National inquiry on information, booking and ticketing of public transport trip	s.6
	Open data	6
	Regulations for weights and measures	6
C)	DESCRIPTION OF THE ITS DEPLOYMENT ACTIVITIES	7
	Traveller Information Services	7
	Traffic management Services	8
	Freight & Logistics services	9
D)	DESCRIPTION OF THE NATIONAL PRIORITY AREAS FOR ACTION AN	۱D
	RELATED MEASURES	.10
E)	DETAILS ON THE IMPLEMENTATION OF CURRENT AND PLANNED	4.5
	ACTIONS	12

a) Description of the national strategy on the development and deployment of ITS

This report is the progress report on ITS deployment in Sweden to be sent to the Commission by 27 August 2014 according to Article 17(3) of the ITS Directive.

New ITS Strategy and Action Plan

The Swedish Government has commissioned the Swedish Transport Administration and the Swedish Transport Agency to propose new strategy and action plan for ITS in Sweden. The new draft action plan was presented in mid-May 2014, and is currently under consultation and will be decided December 2014 or early in 2015. The starting point for the work of a new national strategy and action plan has been, the use of ITS and the introduction of the ITS Directive in Sweden. The proposed strategy / action plan focuses on key processes for infrastructure planning and investment. Three key processes were identified; 1) The process linked to the EU ITS Directive, 2) The process and networks connected to the research and innovation of ITS and 3) the process linked to the introduction and use of ITS. During the work a special attention was payed to engage existing groups and skills that do not necessarily been closely linked to the ITS area before. Five strategic objectives hasalso been identified as prerequisites for ITS to become a natural part of the transport system in Sweden;

- 1. ITS must be an integral part of the planning and investment process.
- 2. Initiativ need to be taken in the international policy work.
- 3. ITS related research, development and innovation, both on national and international level must be coordinated.
- 4. Law processes mest adapt to the rapid evolution of technology.
- 5. ITS field will principally be developed by using existing digital infrastructures and natioanl/international solutions.

Research, Development and Innovation remain important areas, but projects and activities must be clearly linked to the needs of society and the development of the transport sector. To account for ongoing innovation

work in the field of ITS, Forum for innovation in the transport sector¹, participated in the work. The Forum has developed roadmaps within a number of transport-related areas for development and increase of ITS-use in Sweden, so that the intentions of the Horizon 2020 can be reached. These activities are an integral part of the new Swedish strategy and action plan.

Implementation of the ITS Directive 2010/40 / EU - work with delegated acts

The work with Delegated acts is going on continuously, as part of the Swedish Road Administration's efforts to implement the ITS Directive. The Action Plan's focus on infrastructure and planning - investment creates the conditions for the intentions of the Directive is implemented. The Swedish Transport Administration has set up a project for introducing Act e, Secure parking. As for Act c, minimum safety-related information, the Swedish Transport Administration conducted an impact assessment, which shows that the information so provided, required a marginal adjustment to meet the requirements of the Act. For Act d, eCall, impact assessment was conducted, which shows that eCall provides positive socio-economic effects in Sweden.

Autonomus driving

Drive Me – Project with self-driving cars for sustainable mobility is a joint initiative between Volvo Car Group, the Swedish Transport Administration, the Swedish Transport Agency, Lindholmen Science Park and the City of Gothenburg. The Swedish Government is endorsing the project. This pilot project will provide valuable insight into the societal benefits of making autonomous vehicles a natural part of the traffic environment. This unique cross-functional co-operation is the key to a successful implementation of self-driving vehicles. 100 self-driving Volvo cars will use public roads in everyday driving conditions around the Swedish city of Gothenburg. These roads are typical commuter arteries, including motorway conditions and frequent queues. The aim is for the car to be able to handle all possible traffic scenarios by itself, including leaving the traffic flow and

¹ Forum for innovation in the transport sector, is an organization of private and public stakeholders from industry, municipalities and regions, academia and government, and will concentrate on strategic issues related to Swedish research, development and innovation in the transport system and its interaction with other sectors of society.

finding a safe 'harbour' if the driver for any reason is unable to regain control. Autonomous vehicles are an integrated part of Volvo Cars' as well as the Swedish government's vision of zero traffic fatalities. This public pilot represents an important step towards this goal.

b) Description of the technical and legal framework applicable to ITS

The Swedish legal framework – Adoption of the Directive 2010/40/EU

The Directive 2010/40/EU has been adopted to the Swedish legal framework through the Law (2013:315) about Intelligent transportsystem for road transportation. The Swedish Transport Agency has anlayzed the need for further regulations according to the law (2013:315) and it has for example resulted in the need for:

- New regulations that clarify the role of different participants within the area.
- The law (2013:315) needs to explain certain issues e.g. authority and other supplements so the demands in the directive can be executed.

Data Base for national and local traffic regulations (RDT)

The RDT-database for traffic regulations and traffic rules are since 2012 a part of the ordinary activity within The Swedish Transport Agency. The information in RDT is connected to a digital map in The Swedish National Road Data Base

Legal aspects of autonomous driving

The Swedish Transport Agency participates within the field of autonomous driving and develop the legal framework from different perspectives A prestudy has been made with the objective to identify if, how and which legislation needs to change to make it possible for partly or complete autonomous driving. The aim is also to see if it is possible for applied research during 2015, from a legal point of view. The pre-study shows that there are no issues with todays ruels and regulations when it comes to partly autonomous driving and applied research.

Alco- lock technology

There are rules and regulations since 2012 for use of alco-lock technology as a part of penalty and treatment of people convicted of drunk driving.

Road tolls

The EETS directive has been adopted to the Swedish legal framework through Law (2013:1164) and regulation (2014:59) about electronic fare collection.

National inquiry on information, booking and ticketing of public transport trips

The main objective of the inquiry is to facilitate for travellers to use the public transport system in Sweden, including the national railway systems. This includes:

- Access to data about time tables, prices and real time traffic information (if available) from the traffic operators
- Facilitate for user friendly applications and systems for information, booking and ticketing
- If necessary, propose legislation and regulation to make it happen
- Investigate if Linkon AB or other companies/parts of SJ AB need to be separated from SJ AB in order to create a neutral playing field.

The investigator should also investigate the experiences made in UK and other relevant countries. The investigator should report back, at the latest, on the 1st of October 2014.

Open data

The Swedish Government has initiated a development of a technical platform for publishing open-data during 2012 and to evolve the platform during 2013 and 2014. The platform is called oppnadata.se and will be developed in cooperation with other stakeholders. During this period it has been possible to apply for funding for projects that seek to develop the area of open data. This effort has resulted in funding for 22 projects. The results from this assignment is to be presented on the 1 of July 2015.

Regulations for weights and measures

Sweden participates in development of regulations for weights and measures of vehicles towards a less static regulation to more dynamic and performance based rules. Connected cars and infrastructure give the possibility to control the accessibility and to navigate a certain transport

assignment to a route that is better suitedfor the vehicle and the performance of the infrastructure.

c) Description of the ITS deployment activities

The Swedish ministries, authorities as well as and industry and academies are involved in different international development and cooperation projects. The Swedish Transport Administration is working actively with ITS development and deployment in CEDR, ERTICO, TISA Forum, Nordic Road Association and others. The Easy way project and earlier the euro regional project, Viking has been a platform and a "catalyzer" along governmental funding for Swedish ITS activities and ITS deployment.

Sweden has actively participated in EasyWay and will continue to do so within the Easy Way global project (EIP, EIP+ and NEXT-ITS). The cooperation on an agreed set of services, deployment guidelines for implementation and a common road map is valuable also from a national perspective. The MS report from 2012 describes different areas and ongoing deployment activities in Sweden. This description is still relevant. The Swedish situation regarding the EasyWay Road Map services; 1)Traveller information services, 2)Traffic Information services and 3)Freight and logistics services are briefly described.

Traveller Information Services

Traffic Condition Information

The ambition is to reach the optimum level of service. The use of an appropriate reference system can facilitate. The financing of a full TEN-T road network with optimal network coverage will take time to accomplish. Language independence can probably be reached for information provided by the STA (Swedish Transport Administration).

Speed Limit Information Services

Sweden is well ahead regarding the provision of speed limit information.

Travel Time Information Services

Travel times in areas with limited traffic are of less relevance. The business model between public and private is still an open issue. Private service providers are expected to increase their part.

Weather Information Services

Sweden is well ahead within this area. There are no problems to reach the optimum level of service. Information from the STA can probably be supplied in English as well.

Multi-modal journey planners

It is expected that service providers will deliver these services in line with the expectations in the EasyWay Road Map. The STA support such a process but do not intend to develop services.

Traffic management Services

Dynamic Lane Management

Some applications are already on an optimal service level. Other applications such as dynamic overtaking ban are so far not implemented. Services are mainly deployed in larger urban areas with considerable traffic volumes and in tunnels. This is expected to be the case also within the next five years.

Variable Speed Limits

The service is mainly provided in urban areas on most of the critical road segments. Deployments on entire corridors are not foreseen at this stage. More specific applications targeting traffic safety is deploy in crossings and traffic safety for pedestrians.

Ramp Metering

Ramp metering is only deployed on a few sites in the Stockholm area. A significant deployment of the service is not foreseen from present needs. *Incident Management*

Incident management in general is a priority area since it is important to uphold reliability in the transport system. However, this is not only related to specific sensitive sections and the need for ITS based incident detection will be limited. Other actions to minimize incidents and traffic disturbances will be necessary. From a more specific ITS point of view Sweden is trailing compared with central Europe given lower traffic volumes but also extensive road network.

Traffic Management Plans for corridors and networks

Traffic management in the vicinity of bigger cities including cooperation with the municipalities is well developed. Rerouting has mainly been an issue within urban areas or for road sections. Longer rerouting alternatives have not been a substantial issue. Available technical support will help to

facilitate cooperation between national regions. The indicated year for optimal level is believed to be within reach.

Freight & Logistics services

Intelligent Truck Parking

Intelligent truck parking was quite extensively commented in the reporting 2011. Access to truck parking is not a problem in general but it is an emerging problem in the vicinity of conurbation and modal shifts. From a Swedish perspective it therefore makes sense to make the best use of European initiatives on ITP (Intelligent Truck Parking). The Swedish Transport Administration will not provide truck parking services on a commercial basis. Neither will the Swedish Transport Administration apart from a basic outlet provide services that could be provided by private service providers (for example secure parking). The Swedish Transport Administration's main concerns on truck parking including information and reservation services are; 1) Traffic safety and services to the road users.2) Route guidance and messages to the road user. 3) Handling of road traffic related information. 4) Traffic management and especially the possibility to buffer trucks near conurbations and modal shifts. 5) Planning and environmental issues". Reservation is considered to be an issue for private service providers.

Access to abnormal goods transport regulation
The service is operational on the Swedish road network
A possible evolution of emerging services
The services below also mentioned in the Road Map could be useful when addressing substantial problems.

- Driver notification through cooperative systems
- Automatic Access Control

Harmonization on a European level is a prerequisite for an introduction of those services.

d) Description of the national priority areas for action and related measures

The prioritized measures from "EU ITS Action Plan", included in the ITS directive, also recur in the Swedish ITS action plan as follows in the table below.

D. 1. 1.			
Priority Area	Annex 1		Actions in the
			Swedish Multimodal
			Strategy and Action
			Plan 2010-2015
I: Optimal use of			
road, traffic and travel data			
ti avei uata	1.	Multimodal	6.2 Pilot project;
		Travel	Attractive travel
		information	services
	2.	services Real-time travel	2.2 Real time data
	2.	information	2.2 Real time data
		services	
	3.	Availability of road, traffic and	2.1 Road and traffic data
		transport services	uata
		data used for	
		digital maps	
	4.	Road safety related traffic	2.2 Real time data
		information	
		provided free of	
		charge	225 1111
			2.3 Establish a market place for data and
	Other		information for ITS -
			services
TT			
• II: Contin	•		•
uity of			
traffic			
and			
freight manag			
ement			
ITS			
service			
S			Initiative from ITS
	1.1 ITS Framework archi	tecture	Sweden/Sweco
	1.2 Management of passe	enger transport	6.2 Pilot project;
	across different modes		Attractive travel services
	1,.3 Management of freig	ht along transport	4.1 Swedish forum for
	corridors		ITS freight and

		Logistics
	1.4 Realization of ITS applications for freight and logistics	logistics 4.2 Pilot project; One single electronic document 6.2 Pilot project; City logistics 6.1 National urban
	1.5 Urban ITS architecture	mobility forum
III: ITS Road safety and security applications		
	Automatic emergency call	3.1 Deployment of systems and services
	Information services for safe and secure parking places for trucks and commercial vehicles	4.3 Terminals and safe parking sites
	Reservation services for safe and secure parking places for trucks and commercial vehicles	4.3 Terminals and safe parking sites
	4.1 Safety of road users with respect to their on-board HMI	Esop
	4.1 Nomadic devices to support driving task and/or the transport operation	3.2 Pilot project; Full scale trial on selected ITS services and pilot project; "Pay as you drive" 3.3 Co-operative systems 3.4 Communication
	4.1 Security of in-vehicle communications	3.3 Co-operative systems 3.4 Communication
	4.2 Safety and comfort of vulnerable road users	3.1 Deployment of systems and services 3.2 Pilot projects and field trials (IVSS- project)
	4.3 Advanced driver assistance systems integrated into vehicles and road infrastructure	3.1 Deployment of systems and services
IV: Linking the vehicle with the transport infrastructure		
	1.1 Integration of different ITS in an open in-vehicle platform 1.2 Cooperative systems (vehicle-vehicle,	
	vehicle-infrastructure, infrastructure-infrastructure)	

e) Details on the implementation of current and planned actions

The table below shows the progress of the activities in the action plan, described in terms of what is done, what is to be done and some of the challenges in the work ahead.

Activity	What is done	What is left	Challenges
2.1.1 Make available road and traffic data on transport network. (Included in the EU ITS – directive)	Road network, railway network and network for bicycles are available both from STA and from a number of municipalities. Also many attributes associated with the networks and basic information on terminals is available. Open data/API. The Swedish Government has initiated a development of a technical platform for publishing open-data during 2012 and to evolve the platform during 2013 and 2014. The platform is called oppnadata.se and.will be developed in cooperation with other stakeholders.	Some data is still not available, e.g. from the railway, pedestrian data and advanced data regarding terminals and exchange points.	Application of Inspire directive and PSI directive. Combining data from all sources, specifically data from local and national administrations supplemented with data from the private sector (industry). Establishment of a national portal for transport related data.
2.1.2 Make available traffic regulations and instructions	Quality assurance regarding speed and traffic rules. The traffic regulations are now available in the National Road Database (NVDB).		Continuous quality assurance.
2.2.1 Make available traffic data in real time for multimodal transportation	Strategies for road and railway established. Real time data available from public actors as the Swedish Transport Adminsitration, major cities and public transport operators and from private companies.	All transportation modes combined to enable door-to-door solutions. Easy accessibility	Business models. Relation between public and private actors. Relationship between transportation modes.

Activity	What is done	What is left	Challenges
2.2.2 Make available road traffic safety data. (Included in the EU ITS – directive)	Road traffic safety data from DATEX node including STA service RDS/TMC are available free of charge As for file C minimum safety-related information, the Swedish Transport Administration conducted an impact assessment, shich shows that the information so provided, reguired a marginal adjustment to meet the requirements of the act.	The Government in Sweden has announced that we now will have digital broadcasting. This services will use TPEG standard. Action plan for the deployment progress. Specify where the TERN road network services available and report to EU. QA should be investigated.	Business models. Probe data.
2.3.1 Pilot project: establish a market place for data and information	Several initiatives have been tested. The market place oppnadata.se has been established.	Evaluation and further development of the market place oppnadata.se.	Business models.
3.1.1 Alcohol interlock in all transport modes	Voluntarily implemented in many commercial fleets in road Transport. There are rules and regulations since 2012 for use of alco-lock technology as a part of penalty and treatment of people convicted of drunk driving.	Widely accepted by the society. EuroNCAP	Large-scale implementation. All transportation modes. Co-ordination.
3.1.2 Continued implementation of ISA (Intelligent Speed Adaptation)	Implemented together with eco-driving services in some fleets. Introduced by a few insurance companies.	Quality of data. More administrations. Further implementation.	Business model.
3.1.3 Prepare for implementation of eCall system. (Included in the EU ITS directive)	SE har utarbetat en samhällsekonomisk analys som visar att eCall ger samhällsnytta i Sverige.		
3.1.4 Implementation of the European Railway Traffic Management System (ERTMS)	Implementation ongoing. Some railway line already equipped	Deployment according to decided plans in different steps and levels.	Follow the time schedule.

Activity	What is done	What is left	Challenges
3.1.5 Implementation of eNavigation system for the maritime sector	EU Project Mona-Lisa 1.0 (EU)	Project Mona-Lisa 2.0, weather, navigation optimization, bill of loading, cooperation with the civil aviation (EU project SESAR)	Implementation in the real environment
3.2.1 Focus on full-scale trials on selected ITS services	Sweden has four test sites establishment. Among a number of small scale demonstration projects there is also a joint initiative Drive Me -a public pilot with autonomous vehicles 'Drive Me – Self-driving cars for sustainable mobility' is a joint initiative between Volvo Car Group, the Swedish Transport Administration, the Swedish Transport Agency, Lindholmen Science Park and the City of Gothenburg. The Swedish Government is endorsing the project.		
3.2.2 Implementation of the pilot project "Pay-as-you-drive".	Many projects. Introduced by one insurance company. Satisfactory experiences.		Roles and responsibility among the parties.
3.3.1 Open in-vehicle platform architecture, including standard interfaces for the provision of ITS services.	International standardization work. Preliminary study. Commercial pilot project.	Roles and responsibility among the parties. Business models.	Business models.Relevant standardization. Cooperation between vehicle industry, telecom industry and the public sector.
3.3.2 Introduction plan for multimodal transport cooperative services based on usefulness and safety.	Within EU project Easyway and CEDR studies. VINNOVA study in Sweden. Test sites are ready to host tests.	Work together with external actors with issues like roles and responsibility to achieve an agreed plan. Business models.	Roles and responsibility among the parties. Business models.

Activity	What is done	What is left	Challenges
3.3.3 Definition of uniform standard for road markings, road signs, etc.	Sweden participates to the European works. Tests evaluation. Pre-study performed on sign recognition and problems identified in dialog with all the involved parties.	Continue the dialog. More support systems. Market analyze regarding sign recognition. Revise regulations and instructions.	Technical development faster than legal framework adaptation.
3.3.4 Development and trials on the road as sensor.	Tests evaluation (VW Lane Keep Assist evaluated). Dialog with all the involved parties.	Secure the functionality road signs-on vehicle systems	Dialog between vehicle makers and road infrastructure holder.
3.4.1 Specifications for communication between infrastructure and vehicles for cooperative systems. – Infrastructure to infrastructure (I2I) – Vehicle to infrastructure (V2I) – Vehicle to vehicle (V2V)	Standard I2I established. Standardization work ongoing within ISO, ETSI, CEN. Sweden participates. Pilot project, Drive me is launched. Forum for innovation in the transport sector has developed roadmaps within a number of transport-related areas to both develop and increase the use of ITS in Sweden so that the intentions of the Horizon 2020 can be reached.	Continue standardization work. Roles and responsibility. Pilot projects with actors. Packaging of services and verification.	Technical development faster than standardization.
3.4.2 Development and testing of road safety services based on both short-range and mobile communication on specific road sections.	Dialog on packaging of services together with platforms and communication solutions. Volvo Cars Drive Me project started.	Continue with the Drive Me project. Roles and responsibility. Packaging of services and verification.	Roles and responsibility among the parties. Business models.
3.5.1 Establish a national road charging system.	National road charging system implemented for Stockholm, Gothenburg.	Implementation on several sites in Sweden.	Widely inform foreign vehicle drivers on payment procedures for road fees.

Activity	What is done	What is left	Challenges
3.5.2 Implementation of EU EETS directive on electronic fare collection.	The EETS directive has been adapted to the Swedish legal framework through the Law (2013:1164) and regulation (2014:59) about electronic fare collection.		
4.1.1 Establish a Swedish forum for ITS freight and logistics within Europe.	Forum established at Chalmers Göteborg. Several actors participate.	Further development of the forum.	
4.2.1 Pilot project for one single electronic document (eFreight).	Collaboration with other projects: Dryport, Monalisa Project.	Establish EU-project. Introduction of TAF for the railway. Business models. Actors. Operators. Logistic systems.	Cooperation and business models.
4.2.2 Integrate demonstrations for freight (digital freight data, customs declarations, eFreight, etc.) with other demonstration projects.	Follow the decided road map (foot printing, access program, eFreight). Test site NetPort cooperates with other test sites around the Baltic Sea. Cooperation with CLOSER Arena.	Planning, implementation and demonstrations. Business models.	Input from maritime sector.
4.3.1 Standardization of common description of terminals with other actors within Europe. (Included in the EU ITS directive)	Preparations.	To address the issue within corridor based cooperation with other actors.	Define actors and their respective roles.
4.3.2 Secure parking places for heavy trucks. (Included in the EU ITS directive)	The Swedish Road Administration has set up a project for introduction.	Continue the work within EU and in Sweden.Inventory of suitable parking places is ongoing.	Define actors and their respective roles.
5.1.1 Availability of multimodal travel data according to ITS directive.	National inquiry on information, booking and ticketing of public transport trips The main objective of the inquiry is to facilitate for travellers to use the public transport system in Sweden, including the national railway systems.		

Activity	What is done	What is left	Challenges
5.1.2 Negotiator for providing collective information at terminals.	Survey on terminal's needs. Commitments unclear.	Appoint a negotiator. Roles and responsibilities. Business models. Uniformed data.	Appoint a negotiator.
5.2.1 Platform for booking and buying tickets for public transport on a long term basis and for the satisfaction of the travelers.	National inquiry on information, booking and ticketing of public transport trips The main objective of the inquiry is to facilitate for travellers to use the public transport system in Sweden, including the national railway systems.		
5.2.2 Joint payment system among operators on the public transport market.	National inquiry on information, booking and ticketing of public transport trips The main objective of the inquiry is to facilitate for travellers to use the public transport system in Sweden, including the national railway systems.		
5.3.1 Plan/pilot study for security measures for individual journeys.	A report has been published by the Swedish public transport Community (Svensk kollektivtrafik/ stiftelsen Tryggare Sverige). Now there is a roadmap for the development of public transport in Sweden linked to the Horizon 2020.		
6.1.1 Establish a national urban mobility forum.	A "Main Cities Forum" has been established. Follows what is happening in Europe.		

Activity	What is done	What is left	Challenges
6.1.2 ITS plans for multimodal transportation	Responsibility shared through "Main Cities Forum": Traffic management Stockholm. Traveller's information – Gothenburg and City logistic - Malmö. Strategies established.	Common arena for traffic management issues. Participate to the Swedish Logistic Forum. Integration of ITS as a tool in the daily work. Planning for further activities.	
6.2.1 Pilot project: Attractive travel services.	Part of the West Swedish infrastructure package. Part of new services in the Innovation contest in Stockholm (Kista). Part of new services within Trafiklab.	Demonstration of new services.	Traveller's needs. Balance between community responsibilities and individual responsibilities. Business models.
6.2.2 Pilot project: Environmental friendly city logistic and freight handling.	Cooperation with the "Freight & Logistic Forum" and "Main Cities Forum".	Long term solutions. Understand the market's mechanisms. Implementation of pilot projects as good examples.	Create long term solutions for a great challenge.
6.3.1 Traffic signals for multimodal transport and climate-appropriate traffic management.	Preliminary studies: Common arena for traffic management issues. Study in Stockholm regarding adaptive traffic signals. Proposal for "Cycling and ITS". The roadmap for joint traffic connects to climate challenges.		
6.3.2 Public information in the event of major disturbances.	STA and the major cities cooperates to achieve the goal.	Aggregate information based on the traveller's needs for all the transportation modes. Continue the processes related to open data.	