

**Reporting by the Member States referred to in Article 17 of Directive
2010/40/EU – The ITS directive**

Initial report from Sweden

Version: 1

Date: 26/08/2011

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Enterprise, Energy and Communications

With contributions from different stakeholders.

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Borlänge, August 2011

Table of Contents

1	OVERVIEW	3
1.1	Introduction	3
1.2	A Multimodal ITS Strategy and Action plan for Sweden	3
1.3	Harmonized European ITS Services	3
1.4	Work in progress	4
2	Survey on implementation status concerning priority areas	5
2.1	Area I: Optimal use of road, traffic and travel data	5
2.2	Area II: Continuity of traffic and freight management ITS services	5
2.3	Area III: ITS road safety and security applications	7
2.4	Area IV: Linking the vehicle with the transport infrastructure	8
3	Descriptions of activities and projects in the priority areas	9
3.1	Descriptions of activities and projects in priority area I: Optimal use of road, traffic and travel data	9
3.1.1	Multimodal travel information services:	9
3.1.2	Real-time travel information services:	9
3.1.3	Availability of road, traffic and transport services data used for digital maps	9
3.1.4	Road safety related traffic information provided free of charge	10
3.2	Descriptions of activities and projects in priority area II: Continuity of traffic and freight management ITS services	10
3.3	Descriptions of activities and projects in priority area III: ITS road safety and security applications	11
3.3.1	Information and reservation services for safe and secure parking places for trucks.....	11

1 OVERVIEW

1.1 Introduction

ITS-solutions have been used in the Swedish transport system for a long time, not only for road traffic, but also for rail traffic, maritime shipping and air traffic, but under other names. There are many applications, but most of them are related to each mode of transport individually. Now we try to get a more intermodal approach. Since April 2010 we have a new Swedish Transport Administration which is responsible for the long-term planning for all modes of transport and the construction, operation and maintenance of state road network and national railway network.

1.2 A Multimodal ITS Strategy and Action plan for Sweden

In connection with the ITS World Congress in Stockholm 2009 we tried to get a more multimodal approach than before. To continue the cooperation between different actors, which was established during the Congress and accelerate further implementation of ITS and exploit its potential, the Government commissioned the Swedish Road Administration to produce a Multimodal ITS strategy and action plan for Sweden. The priority actions in the ITS Directive have been integrated into the Swedish action plan. Attached you will find the document in Swedish and a summary in English.

The Swedish Transport Administration has a coordinating responsibility for implementing and monitoring the work of this Action Plan and has established an ITS Office to support this work.

To support the work the Government also has appointed an ITS Council. The Council comprises 21 members from government, industry and academia. The Council shall advise and expedite the Transport Administration's and other stakeholders efforts to implement the Action Plan for ITS. Furthermore, the Council shall develop forms of cooperation both between authorities and between authorities and industry, and increase Swedish actions in the EU within the ITS field. It will be a final report from the Council on 31 December 2012.

1.3 Harmonized European ITS Services

We are positive to harmonized European ITS services and we are working on this in the context of many different European forums and projects. A collaboration of importance is for example EasyWay where we will continue to participate actively.

In the rail area we are working on measures in the EU corresponding ITS for road traffic. This is particularly intelligent traffic management (ERTMS) in which the Swedish Transport Administration is actively involved in the development and adoption. In the Transport Administration we organize traffic management for railway and road in the same unit. Despite initial differences in working conditions we have already had positive experiences of coordinated traffic management including deviation situations in extreme weather situations.

Within the Motorways of the Sea project, MONALISA, we are working towards optimization of maritime traffic routing. Current methods for surveillance of maritime traffic should in the future be replaced with proactive traffic services, operating in e-navigational environment supported by electronic surveillance- and decision support systems. The Motorways of the Sea concept can be seen as the maritime dimension in the trans-European transport network (TEN-T) and contributes with both co-financing as well as a platform for increased collaboration between governments, industry and academia.

Maritime Reporting Systems (Safe Sea Net) are under construction or recently put in to operation in several Member States. The systems are designed according each nation's requirements. There are consequently a number of different solutions regarding user interfaces and functions. A common standard would simplify reporting for all users. A natural next development step for the single window solution is to integrate other mandatory reporting requirements and adjust user's interfaces in direction to a common EU standard. The Swedish Maritime Administration in cooperation with other national stakeholders are currently involved in work finding and presenting solutions to the problem.

1.4 Work in progress

The work with the Swedish action plan began in the autumn of 2010. The ITS domain is characterized by a variety of players with a variety of solutions and is also fragmented. The ITS Council's work has focused on establishing good contacts and initiate collaborations, both between authorities and between authorities and industry. The ambition has been to jointly develop and clarify responsibility, where the authorities define the social problems and the industry delivers ITS solutions that help to solve the problems. Problem definition should be based on the transport policy objectives and solutions from commercial opportunities. Within the framework of cooperation between governmental agencies and industry are the legal conditions, procurement rules, intellectual property, conflict of interest and competition issues important to achieve a successful implementation model. An important part of the collaborative process is to develop pilot and field test and to develop procedures for innovative procurement.

As part of the ITS Council's work three forum have been established:

- ITS urban mobility. Members are the Cities of Stockholm, Gothenburg and Malmö, the Swedish Transport Administration and public transport organizations in the three cities.
- ITS for freight. Members are both public and private organizations and academia.
- Cooperation between different administrations

We also have a forum for the European ITS Action Plan organized by ITS Sweden in order to coordinate the Swedish activities.

2 SURVEY ON IMPLEMENTATION STATUS CONCERNING PRIORITY AREAS

The measures listed in the tables in this section coincide completely with Annex 1 of the ITS Directive.

2.1 Area I: Optimal use of road, traffic and travel data

Priority area I: Optimal use of road, traffic and travel data			
Activities or projects concerned with the optimal use of road, traffic and travel data	<input checked="" type="checkbox"/> Implemented	<input type="checkbox"/> Planned	<input type="checkbox"/> Not planned
Contact person in administration	Mari-Louise Lundgren, Swedish Transport Administration, mari-louise.lundgren@trafikverket.se, +46 243-75525		
Comments			
If activities/projects are implemented or planned in this priority area, please specify further:			
Multimodal travel information services	<input checked="" type="checkbox"/> Implemented	<input type="checkbox"/> Planned	<input type="checkbox"/> Not planned
	See section 3		
Real-time travel information services	<input checked="" type="checkbox"/> Implemented	<input type="checkbox"/> Planned	<input type="checkbox"/> Not planned
	See section 3		
Availability of road, traffic and transport services data used for digital maps	<input checked="" type="checkbox"/> Implemented	<input type="checkbox"/> Planned	<input type="checkbox"/> Not planned
	See section 3		
Road safety related traffic information provided free of charge	<input checked="" type="checkbox"/> Implemented	<input type="checkbox"/> Planned	<input type="checkbox"/> Not planned
	See section 3		
<i>Others: Please specify</i>	<input type="checkbox"/> Implemented	<input type="checkbox"/> Planned	<input type="checkbox"/> Not planned

2.2 Area II: Continuity of traffic and freight management ITS services

Priority area II: Continuity of traffic and freight management ITS services			
Activities or projects concerned with continuity of traffic and freight management ITS services	<input checked="" type="checkbox"/> Implemented	<input checked="" type="checkbox"/> Planned	<input checked="" type="checkbox"/> Not planned
Contact person in administration	Mari-Louise Lundgren, Swedish Transport Administration, mari-louise.lundgren@trafikverket.se, +46 243-75525		
Comments			
If activities/projects are implemented or planned in this priority area, please specify further:			
ITS Framework architecture	<input type="checkbox"/> Implemented	<input checked="" type="checkbox"/> Planned	<input type="checkbox"/> Not planned
	We have used ARKTRANS in different R&I projects and there are proposals to continue this work		

Management of passenger transport across different modes	X Implemented	<input type="checkbox"/> Planned	<input type="checkbox"/> Not planned
	Since April 2010 we have a new Administration with responsibility for both roads and railways and we have a new strategy for multimodal traffic information. See also information about the new law for public transport in section 3.		
Management of freight along transport corridors	<input type="checkbox"/> Implemented	X Planned	<input type="checkbox"/> Not planned
	See section 3		
Tracking and tracing of freight across all modes of transport (freight transport logistics, eFreight)	<input type="checkbox"/> Implemented	X Planned	<input type="checkbox"/> Not planned
	We have tracking and tracing solutions including the use of RFID for both shipping and railroad, and for example in the Dry-Port-project there is an intermodal approach. We are also very interested in e-Freight.		
Urban ITS architecture	<input type="checkbox"/> Implemented	X Planned	<input type="checkbox"/> Not planned
	We have a forum between the three metropolitan areas in order to jointly introduce innovative solutions for sustainable community development focusing on ITS and the Swedish Transport Administration is working with a strategy for urban traffic management.		
<i>Others: Please specify</i>	<input type="checkbox"/> Implemented	<input type="checkbox"/> Planned	<input type="checkbox"/> Not planned

2.3 Area III: ITS road safety and security applications

Priority area III: ITS road safety and security applications			
Activities or projects concerned with ITS road safety and security applications	<input checked="" type="checkbox"/> Implemented	<input checked="" type="checkbox"/> Planned	<input type="checkbox"/> Not planned
Contact person in administration	Mari-Louise Lundgren, Swedish Transport Administration, mari-louise.lundgren@trafikverket.se, +46 243-75525		
Comments			
If activities/projects are implemented or planned in this priority area, please specify further:			
Automatic emergency call	<input type="checkbox"/> Implemented	<input checked="" type="checkbox"/> Planned	<input type="checkbox"/> Not planned
	Sweden is a part of the HeERO-project. During three years (2011-2013), the nine European countries forming the HeERO consortium will carry out the start-up of an interoperable and harmonised 112 based in-vehicle emergency call system.		
Information services for safe and secure parking places for trucks and other commercial vehicles	<input type="checkbox"/> Implemented	<input checked="" type="checkbox"/> Planned	<input type="checkbox"/> Not planned
	See section 3		
Reservation services for safe and secure parking places for trucks and other commercial vehicles	<input type="checkbox"/> Implemented	<input checked="" type="checkbox"/> Planned	<input type="checkbox"/> Not planned
	See section 3		
Safety of road users with respect to their on-board HMI	<input checked="" type="checkbox"/> Implemented	<input type="checkbox"/> Planned	<input type="checkbox"/> Not planned
	We have several joint projects between the authorities and the Swedish automotive industry		
Nomadic devices to support driving task and/or the transport operation	<input checked="" type="checkbox"/> Implemented	<input type="checkbox"/> Planned	<input type="checkbox"/> Not planned
	We have several services, for example with speed alert and traffic information		
Security of in-vehicle communications	<input checked="" type="checkbox"/> Implemented	<input type="checkbox"/> Planned	<input type="checkbox"/> Not planned
	The Swedish automotive industry working on these issue		
Safety and comfort of vulnerable road users	<input type="checkbox"/> Implemented	<input checked="" type="checkbox"/> Planned	<input type="checkbox"/> Not planned
	We have some joint projects between the authorities and the Swedish automotive industry and also some others		
Advanced driver assistance systems integrated into vehicles and road infrastructure	<input type="checkbox"/> Implemented	<input checked="" type="checkbox"/> Planned	<input type="checkbox"/> Not planned
	We have several joint projects between the authorities and the Swedish automotive industry and other companies, for example alcolocks, speed alert, eCall and pay as you drive		
<i>Others: Please specify</i>	<input type="checkbox"/> Implemented	<input type="checkbox"/> Planned	<input type="checkbox"/> Not planned

2.4 Area IV: Linking the vehicle with the transport infrastructure

Priority area IV: Linking the vehicle with the transport infrastructure			
Activities or projects concerned with linking the vehicle with the transport infrastructure	<input type="checkbox"/> Implemented	X Planned	X Not planned
Contact person in administration	Bengt Hallström, Swedish Transport Administration, bengt.hallstrom@trafikverket.se, +46 243-75179		
Comments			
If activities/projects are implemented or planned in this priority area, please specify further:			
Integration of different ITS in an open in-vehicle platform	<input type="checkbox"/> Implemented	<input type="checkbox"/> Planned	X Not planned
	Each automotive company works independently with this		
Cooperative systems (vehicle-vehicle, vehicle-infrastructure, infrastructure-infrastructure)	<input type="checkbox"/> Implemented	X Planned	<input type="checkbox"/> Not planned
	We have just finalized a joint feasibility study between authorities, automotive industry, telecom industry and others. We are now planning the next step.		
<i>Others: Please specify</i>	<input type="checkbox"/> Implemented	<input type="checkbox"/> Planned	<input type="checkbox"/> Not planned

3 DESCRIPTIONS OF ACTIVITIES AND PROJECTS IN THE PRIORITY AREAS

3.1 Descriptions of activities and projects in priority area I: Optimal use of road, traffic and travel data

3.1.1 Multimodal travel information services:

”Resrobot”

A national travel planner called Resrobot. Samtrafiken operates the service Resrobot, compares the various collective travel options based on local traffic, train, plane, ferry and car, and has detailed station information. In Resrobot there are about 50,000 bus stops and the system includes 99 percent of all domestic public transport. It is available as a web and mobile application for iPhone and Android phone. Resrobot is operated by the national public transport organization Samtrafiken.

”Trafiken.nu”

At the regional level, there are web-based integrated or co-modal travel planners for all modes of transport for Stockholm, Gothenburg and the south of Sweden. Trafiken.nu is a collaboration between the Swedish Transport Administration, the local public transport companies and the municipalities.

New law for Public transport

The new Traffic Act which comes into force on 1st of January 2012, will require coordination of information for all public transport in Sweden. In the “doubling project” for public transport, work is under way to develop proposals for the type of information that carriers must submit to a common system for user information in order to meet the requirements of the new public law and the ways in which this information is to be provided, managed and up-dated.

Attractive travel services in Gothenburg

A regional cooperation in Gothenburg (DART) is developing and testing a concept of travel services to users, which coordinates passenger information along 5 pinpointed commuting routes. The concept includes a door-to-door journey for all transport modes and the information is provided at road side, on the Web and on mobile phones.

3.1.2 Real-time travel information services:

In Sweden you can subscribe free real-time information on the road network through contracts with the Swedish Transport Administration. All information from the Transport Administration is available via a standard interface, DATEX II. Examples of information that is available are road condition, road works, obstacles, accidents, message queue, closed roads, etc. The data used is collected through the Administration’s own channels (CCTV-cameras, loops and rapporteurs) or through contracts or arrangements such as SOS, taxi and the police. There are also external information brokers such as Info24 and Mobile Media, which also collects traffic information and sell.

3.1.3 Availability of road, traffic and transport services data used for digital maps

The entire road network in Sweden is covered with basic information, including traffic regulations, through a partnership between different authorities, municipalities and the forest industry. The Swedish Transport Administration is responsible party based on national

regulation. Data is maintained in a national database (NVDB) and made available through a portal, based on agreements, in different formats and by different services.

At the end of this year services based on the ROSATTE specifications will be available and at least one of the major map providers will use it. In July 2012 the download services according to the INSPIRE regulations will be in place. Metadata and view services based on INSPIRE regulations are already in place for the road network (as well as for rail network).

3.1.4 Road safety related traffic information provided free of charge

All traffic safety information available from the Swedish Transport Administration is free for the end user if he buys a piece of equipment for the reception.

In Sweden there are two operators, service providers for RDS-TMC. One of the services is a CA - service and the Swedish Transport Administration provides an open, free service that has existed since 1997. The number of systems currently estimated at about 2.5 milj. Smartphones with apps using GPRS/3G with traffic information growing rapidly in Sweden. Private and public radio stations broadcast daily traffic safety information throughout the country.

Of the traffic safety-related categories developed in the Tisa Forum, the most important are;

Category (1): Ghost driver

Category (2): Dangerous road surface

Category (3): Danger due to reduced visibility

Category (4): Animal / people / debris in the road way

Category (5): Blockade of road, tunnels ...

Category (6): Unprotected accident area

Category (7): Temporary roadwork

Category (8): Unexpected End of queue

3.2 Descriptions of activities and projects in priority area II: Continuity of traffic and freight management ITS services

3.2.1 Management of freight

Road transport is to a large extent a low margin business with a limited ability to pay for non compulsory services. Only a limited part of road transport is tightly integrated in a total logistic solution. To what extent will the transport buyers accept additional costs for enhanced transport quality through ITS-services? The answer is dependent on to what extent these services will provide added value to the transport chain. Looking ahead, we see an increasing demand for transports but a limited expansion of infrastructure. The logical response is a more effective use of the available capacity. Planning of transports is in that context likely to become more important. Subsequently, ITS services that support an effective use of the transport system will become important from different stakeholders perspective.

In Sweden we have recently developed a strategy for freight and we have established a forum for the ITS freight that will develop a roadmap. We also work actively with Green corridors for freight. In the program Green Corridors we have identified a lot of interesting projects and some of them are about ITS. There is project from information systems between lorries, to system for information brokers.

3.3 Descriptions of activities and projects in priority area III: ITS road safety and security applications

3.3.1 Information and reservation services for safe and secure parking places for trucks

Freight transport is crucial for Sweden being a geographically long country in the outer parts of Europe. Sweden is on the other hand not so densely populated and traffic volumes are therefore still reasonable compared with central Europe. Access to truck parking is not a problem in general but it is an emerging problem in the vicinity of conurbations and modal shifts. From a Swedish perspective it therefore makes sense to make the best use of European initiatives on ITP (Intelligent Truck Parking).

There are basically three types of truck parking:

- 1 Lay bays provided by the Transport Administration. At larger lay bays there are parking lots dedicated to HGV:s. Normally there is also a basic service outlet such as lighting and toilets. Truck parking can also be provided by other road operators.
- 2 Commercial initiatives. For example at Petrol Stations. Parking as such could be free of charge though. 1 and 2 could be combined.
- 3 Other possible parking. Parking is allowed but not advertised or recommended.

So far there have been difficulties for service providers finding solid business cases for the provision of truck parking on a commercial basis, but we do not exclude that it is possible to find sustainable business models. This also reflects that freight road transports to a large extent are a low margin business. This is also a general challenge for the introduction of ITS services supporting freight transport.

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

- Traffic safety and services to the road users
- Route guidance and messages to the road user. This could be delivered through both VMS and traditional road signs. Suitable truck parking could be at some distance from the road especially in conurbations.
- Handling of road traffic related information
- Traffic management and especially the possibility to buffer trucks near conurbations and modal shifts.
- Planning and environmental issues

The Swedish Transport Administration will also study to what extent it might be possible to take advantage of the existing terminal infrastructure for the provision of secure parking.

The Swedish Transport Administration will continue to actively participate in the European cooperation on ITP within the EasyWay project.