

# **Information for the European Commission**

**ITS measures planned for the following  
five-year period**

Federal Ministry of Transport, Building and Urban Development

August 2012

## Introduction

The reporting basis is Article 17(2) of Directive 2010/40/EU of the European Parliament and of the Council of 7 July 2010 on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport. This article requires Member States to submit to the European Commission by 27 August 2012 a report on their national ITS actions envisaged over the following five year period.

The following report describes the ongoing and planned activities in the field of ITS, with reference to the priority areas defined in the EU Directive.

To describe the ITS measures, a standardized structure in the form of measure profiles has been chosen, which are arranged in accordance with the national priority action areas. A summary can be found in the section entitled "Measures". To ensure the participation of all the relevant stakeholders in the transposition of the ITS Directive in Germany and, in particular, in the compilation of the present report, the Federal Ministry of Transport, Building and Urban Development has created an ITS Advisory Council. This advisory council adopts by consensus all the steps for the transposition of the Directive into national legislation. The ITS Advisory Council comprises representatives from:

- the Federal Government;
- the federal states;
- local authorities;
- the electrical industry;
- the automotive industry;
- the information and communications industry;
- ITS organizations;
- broadcasting corporations;
- standardization bodies;
- the scientific and research community;
- regulatory authorities;
- user associations.

Great care was taken in compiling this report, and numerous national institutions were involved. Although it provides a broad overview of ITS measures in Germany, it makes no claim to be exhaustive in its presentation of detailed information and its enumeration of individual systems and projects.

## **Measures**

The present report focuses on describing the measures in the field of intelligent transport systems (ITS) for road transport. For the detailed description of the measures, a standardized structure in the form of profiles has been chosen. A national action plan for ITS, the ITS Action Plan for the Roads, has been developed in Germany with the participation of many experts. This plan defines measures for the evolution and future use of ITS.

The description of the ITS measures within this report has been arranged in the form of measure profiles along the lines of the Action Plan, and the existing ITS have been classified within this structure.

The ITS Action Plan for the Roads is subdivided into three priority action areas:

- 1 Optimum use of road, traffic and travel data
- 2 Continuity of the ITS services in the fields of traffic management and traffic information
- 3 ITS applications to enhance the efficiency of transport, road safety and security, and environmental sustainability

The following digest provides an overview of the ITS measures. Detailed documentation on each measure is subsequently provided.

## **Action area 1: Optimum use of road, traffic and travel data**

### **1.1 Guide to the area-wide capture of traffic-related data and incidents**

This measure will involve developing a guide that will lay the foundations for capturing dynamic traffic data on an area-wide basis that cuts across responsibilities and takes all data capture options into account or for obtaining these data from third parties. The purpose of the guide will be to assist the decision-makers at the competent public road operators in selecting the technology or procurement strategy for traffic-related data and to support investment decisions for the detection or procurement of data.

### **1.2 Establishment of a quality management system for the capture and processing of data for ITS services**

There is as yet no comprehensive approach for a quality management system that covers all the steps in the ITS data processing chain, nor is a comprehensive review of the contents of the data captured and the information generated (as a basis for ITS) conducted.

Different technical standards and developments of existing and new ITS result in an extensive stock of complex ITS networks, which are to be addressed in an integrated quality management strategy. The “Guide to the area-wide capture of traffic-related data and incidents” (measure 1.1) will stipulate the data quality requirements. The measure described here will develop the practical steps that are necessary for ensuring that these quality requirements are met.

### **1.3 Establishment of a mobility data marketplace**

The mobility data marketplace (MDM) will make available traffic data collected locally by various parties via a web-based portal with standardized interfaces. This portal will allow service providers (individual mobility services) and public road operators (collective adaptive traffic management), for instance, to provide, search for and subscribe to dynamic traffic-related data. The exchange of data between the parties

will be via standardized interfaces. In this way, data consumers will be able to subscribe to and obtain types of data that are of interest to them via the MDM without having to perform a protracted search and enter into a process of time-consuming bilateral coordination with the data providers.

The MDM will implement priority action (b) of the ITS Directive, namely the provision of real-time traffic information services.

#### **1.4 Procedure to optimize the accessibility of map-related road data for ITS**

Up-to-date and exhaustive road infrastructure data are an important basis for ITS. The capture and maintenance of these data and, above all, the provision of them for ITS are to be such that all the relevant information is available in the necessary standardized data structures and in the necessary quality and that it can be made available via clearly defined and standardized exchange processes that are as simple as possible. In addition to meeting the technical requirements, this measure is designed to create the organizational and regulatory frameworks for non-discriminatory access to road data.

#### **1.5 Safety-related traffic information with no additional charge to the end user**

New technologies for capturing safety-related incidents and transmitting the reports promise to further enhance safety. Most of these innovations can only be implemented in collaboration with the private sector. The challenge of the future will be how to shape cooperation between public and private sector players in this field.

A new EU framework and requirements call for the revision of existing national rules and regulations. Thus, for instance, the European requirements must be taken into account when revising the Framework Guidelines on Traffic Information Services.

German involvement in TISA, CEDR, EasyWay and European Commission groups of experts will ensure that the German requirements are reflected in the European rules and regulations. This measure will thus implement priority action (c) of the ITS Directive.

## **Action area 2: Continuity of the ITS services in the fields of traffic management and traffic information**

### **2.1 Development of an overarching intermodal ITS vision**

The national ITS vision formulates a clearly structured, overarching, long-term political vision with regard to the deployment of ITS, which takes into account the interests of the players and users and describes the objectives and benefits.

When drawing up the ITS Action Plan, the Federal Ministry of Transport, Building and Urban Development, together with the ITS Advisory Council, formulated a strategy for the deployment of ITS. This strategy contains the major guiding principles for positioning in the field of transport telematics. Within this measure, this strategy will be evolved and coordinated with the stakeholders, taking other existing ITS visions into account.

### **2.2 Development of an ITS framework architecture for the roads**

The ITS framework architecture will supply the implementation framework for the delivery of the ITS strategy/vision. The ITS framework architecture will establish basic specifications for terms, standards, mechanisms and technologies that are required to ensure the interoperability of the applications and components that operate at different levels and communicate in a distributed environment. However, the ITS framework architecture will also define the regulatory principle, the processes and the organizational forms in its scope of application.

This measure will involve developing the ITS framework architecture for road transport for Germany, including the interfaces with other transport modes, on the basis of work carried out so far and taking the recent developments at European level into account.

### **2.3 Development of an ITS reference architecture for traffic management that cuts across responsibilities**

One of the major objectives here is the creation of a universally accepted perception of traffic management as a prerequisite of ITS traffic management services that cut

across responsibilities and are seamless for the road user. Closely linked to this is the facilitation of the development and introduction of ITS services that cut across responsibilities.

This will be achieved by developing an appropriate ITS reference architecture with functional, organizational and technical requirements specifications for the harmonization of cooperation and collaboration between state-owned road operators and service providers and for the interoperability of their technical systems.

#### **2.4 Development of an ITS reference architecture for public transport**

The development of a functionally effective and economically operable framework architecture for ITS systems within this measure will provide those responsible for public transport and those responsible for intermodal transport with the basis for a coordinated and synchronized implementation of ITS and their operations. The recommendations will take into account not only the EU framework but also, in particular, the regional differences in existing ITS and future developments in the field of technology and operational management. The recommendations will identify migration paths for the establishment, interlinking, integration and permanent and stable operation of ITS.

The objectives of the ITS framework architecture in public transport are the articulation of functional/technical recommendations on reference systems and the organizational, funding and regulatory/anti-trust frameworks that have to be taken into account in the public transport environment. In particular, the focus will be on the interfaces between public and private transport, i.e. intermodal transport.

#### **2.5 Definition of strategic transport corridors**

Transport infrastructure that is of key importance to the network as a whole will be defined as strategic transport corridors. For these corridors, ITS services and systems should be established that are standardized to the greatest extent possible and harmonized along the corridors. In this way, it will be possible to reduce traffic disruption and better ensure mobility on strategically important transport arteries.

The definition of a strategic network, including the elaboration of the necessary methodology, will take the form of a guide. The guide, which will initially be developed for the road operators of the federal states, is to be designed such that it can later be expanded to cover the interests of local authority road operators.

## **2.6 Evolution of road works site management**

Road users tend to regard road works as a nuisance. However, they are absolutely essential if the structural fabric is to be maintained and the infrastructure improved, especially since the total need for structural maintenance is continuing to rise. It is thus necessary to improve the organisation and automatisisation of the process of planning road works sites and to optimize it taking account of the impact on traffic and the economic efficiency of the road works.

The assessment of road works sites lasting more than eight days by the Federal Ministry of Transport, Building and Urban Development as part of the scheduling of works will be evolved and take the form of comprehensive monitoring. The basis for this will be the development of a standardized assessment method for the impact of road works sites on traffic, which will take place as part of this measure.

## **2.7 Harmonization of individual and collective traffic information and adaptive traffic control**

The establishment of an approach, agreed between the operators of collective adaptive traffic control systems and the providers of individual navigation services, to the provision of information to road users is a prerequisite for consistent and optimally effective traffic information and route recommendations.

This measure is designed to lay the basis for an appropriate agreement on collaboration between public sector road operators and private sector service providers. The objective is to develop a collaborative model. The findings will inform the revision of the Framework Guidelines for Traffic Information Services.



## **2.8 Functional ITS provisions as a basis for the integration of innovative system elements into investment planning**

In the future, new types of ITS components will have to be integrated into the overall ITS system. However, there is as yet no overarching framework provision (as a functional provision) in which objectives, thresholds and parameters are established that permit scope for action for innovations. For instance, an agency responsible for construction and maintenance could define a specific impact for its strategic network and accept all requests for the funding of measures that demonstrably meet this requirement, regardless of the constraints imposed by the current implementation provisions. To this end, it is imperative that the methods for determining the effectiveness of ITS measures be evolved.

Implementing provisions governing the various options, the purpose of which is to harmonize delivery of the systems, would then be adopted as secondary provisions to the new functional framework provision.

Uniform quality requirements (functional performance requirements) will have to be developed and introduced. This will also involve a continuous review of the impact of the implemented measure.

### **Action area 3: ITS applications to enhance the efficiency of transport, road safety and security, and environmental sustainability**

#### **3.1 Project Plan for Road Transport Telematics**

The Project Plan for Road Transport Telematics contains over 130 specific ITS measures that are to be progressively implemented over the period to 2015. For this purpose, federal government funding totalling 50 million euros a year will be available to the highway authorities of the federal states over the next few years. Adaptive traffic control systems will be installed on federal motorways. This will make it possible to make better use of the transport infrastructure, to avoid traffic disruption and to considerably shorten journey times. At the same time, the number of road accidents will be significantly reduced.

The Project Plan for Road Transport Telematics includes investment in the following telematics systems:

- active traffic management systems;
- congestion warning systems;
- strategic traffic management systems;
- ramp metering systems;
- junction management systems;
- variable lane use;
- temporary hard shoulder running;
- traffic control centres;
- traffic data capture.

### **3.2 Devising and trialling cooperative systems**

Cooperative systems exhibit additional potential for making the flow of traffic safer, more efficient and more environmentally sustainable for road users and their environment. Cooperative systems are based on the possibility of vehicle-to-vehicle, vehicle-to-infrastructure and infrastructure-to-infrastructure communications. The data and information acquired in this way are transmitted directly into vehicles, thereby enabling motorists to drive more safely, more efficiently and in a more environmentally friendly manner.

There is to be an exchange of information between the players based on open communications standards, which will create a common, up-to-the-minute knowledge base that can be interpreted and used by future driver information and assistance systems.

The objective of this measure is to explore the feasibility of introducing cooperative systems and to develop the bases for a decision on their deployment. The aim is to be able to decide whether the introduction of cooperative systems is possible and how a deployment scenario could be fleshed out.

### **3.3 Introduction of eCall**

eCall is a vehicle-based automatic emergency call system with the help of which the time elapsing between an accident and the emergency services arriving at the scene is to be reduced by the automatic triggering of an emergency call and the quality of the accident notification is to be improved by a positioning component and the additional transmission of data that are important for the optimum control of the emergency service chain. The interoperability of the system throughout the European Union will be ensured by the use of the single European emergency call number 112 and the set of data standardized throughout Europe (minimum set of data – MSD). In addition to emergency calls being made automatically by in-vehicle sensors in the event of a serious accident, they can also be made manually by the vehicle occupants.

The objective of this measure is the implementation of the European eCall system throughout Germany with the parallel use of equivalent systems (TPS eCall).

### **3.4 Telematics-controlled HGV parking as part of the information services for safe and secure parking areas for heavy goods vehicles and other commercial vehicles**

Heavy goods vehicle (HGV) parking has to be both safe and secure. In the years ahead, the authorities in Germany will give priority to further improving the parking situation for HGVs. This measure will thus focus on the provision of information for safe and secure parking areas for heavy goods vehicles and other commercial vehicles (priority action (e) from EU Directive 2010/40/EU). To this end, functional detection requirements will first be formulated. In addition, the requirements of the users (accuracy, reliability, information channels) will have to be determined.

Afterwards, the rest areas on motorway sections where there is great demand for HGV parking are to be equipped with telematics systems in the medium term, and the data acquired in this way are to be made available via the mobility data marketplace (MDM) for use on the Internet and in navigation devices. The private truckstops located alongside the motorway are to be encouraged to participate, as are data consumers as users of the data.