

# **Report on ITS actions of the Czech Republic envisaged over the following five year period**

*drawn up pursuant to 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*

---

The Czech Republic's transport policy for the 2005-13 period was approved by Government Resolution No 882 of 13 July 2005 and remains in force until 2013, as does the follow-up strategy paper entitled 'Strategy for innovative technologies in transport (INOTECH)', which sets out objectives and measures relating to the development of ITS.

A new transport policy for 2014-20 is currently being drawn up and this will serve as the basic strategy document for the transport sector and form the basis for follow-up strategy papers and action plans for the development of individual areas, including a follow-up strategy paper for intelligent transport systems and innovative technologies.

This report covers the main needs and priorities for the development of ITS that are being discussed with the regions and cities, transport infrastructure managers, the transport police, emergency response units, transport and logistics companies and the relevant professional organisations, in the context of drawing up the country's new transport policy and the new action plan for the development of ITS.

It is expected that the 'Action plan for the deployment of intelligent transport systems in the Czech Republic' will be submitted to the Czech Government for consideration in 2013. It will identify development needs in the form of measures and projects by priority, the method of financing and the envisaged implementation period, and will also specify the role and responsibility of the parties involved in terms of implementing such measures. It will not be confined to road transport, but will also address urban transport, public passenger transport and rail transport.

In the context of the national ITS activities envisaged by the Czech Republic, reference should also be made to the 'Report on the Czech Republic's activities and projects relating to ITS priority areas', which was drawn up in 2011 pursuant to Article 17(1) of Directive 40/2010/EU. Annex 1 to that report lists individual projects which are currently starting up, such as the 'National standard for electronic passenger clearance in public transport', RODOS, which is aimed at linking up leading Czech research institutes and firms active in the transport systems field and creating a platform for collaboration amongst them, and HeERO (Harmonised eCall European Pilot), which is now being implemented. Annex 1 to the report also lists the specific ITS activities which the Czech Republic has been developing and will be developing over the next few years. The project lists were compiled with input from all the national bodies concerned and are still current.

## **National cross-cutting ITS activities:**

- Provision, on the basis of an amendment to the Roads Act introducing a number of key changes in the field of ITS, of organisational arrangements for achieving operational connectivity between ITS subsystems, including links between ITS systems and relevant systems of other transport modes;

- Development, following discussion and approval of the Czech Republic's new transport policy for 2014-20, of an ITS action plan encompassing national-level ITS activities for all transport modes and identifying key measures, implementation deadlines and financing proposals;
- Definition of technical, technological, metrological and safety requirements for ITS equipment and its operation, in particular for safety-critical ITS applications and guaranteed GNSS applications;
- Introduction of methodologies for planning and preparing ITS projects resulting in harmonised deployment of ITS;
- Support for interoperable open standards-based systems solutions;
- Harmonisation of ITS on the motorway and road network (integration of existing and new technologies) and cross-border cooperation;
- Harmonisation of ITS on railway infrastructure, in particular for light rail and regional railway systems (integration of existing and new technologies) and cross-border cooperation;
- Putting in place a methodology for assessing the effectiveness and impact of deploying ITS;
- Participation in the international standardisation activities of the ISO, CEN, ETSI, etc.
- Ongoing launching of, and support for, research activities aimed at continuously refining ITS in terms of functional performance, reliability and safety.

## 1) Priority area I under the ITS Directive

### **PRIORITY AREA I**

Optimal use of road, traffic and travel data

### **PRIORITY ACTION (A)**

Provision of EU-wide multimodal travel information services

### **PRIORITY ACTION (B)**

Provision of EU-wide real-time traffic information services

### **PRIORITY ACTION (C)**

Data and procedures for the provision, where possible, of road safety related minimum universal traffic information free of charge to users

### **National actions for priority area I:**

- Equipping critical transport infrastructure with suitable monitoring systems, creation of models capable of using various types of data to estimate the condition of the network beyond the range of point (road section) detectors, or introduction of modern

comprehensive detection technologies;

- Integration of all sources of up-to-date traffic information in a central datastore, uniform approach to locating traffic events;
- Further progress towards completing an ITS data register providing information on ITS data;
- Creation of a single geographical information system which will contain cartographic material for every body concerned in the transport and other sectors, and the Integrated Emergency Response System (IZS);
- Creation of a uniform information base by integrating locally oriented data from multiple data sources into a single coherent database that can be used to obtain comprehensive information;
- Support for R&D relating to information systems for evaluating the level of relevance and usefulness of data which has been obtained and archived, e.g. support for the development of systems using modern data-mining techniques;
- Support for activities relating to the on-line transmission of relevant up-to-date information to final users (transport infrastructure managers, IZS units, drivers, passengers, etc.) on the situation on infrastructure;
- Provision of on-line traffic data, including the transmission to drivers of up-to-date information on available parking spaces at P&Rs;
- Use of archived data to forecast future developments and determine the effectiveness of ITS-based measures;
- Creation of conditions for generating derived traffic information across the entire network (road surface conditions, travel times, potential bottlenecks, etc.);
- Innovation in systems for distributing traffic information to drivers and exchanging information between traffic and information centres, using new formats and protocols (TPEG, DATEX II);
- Support for the development of, and innovation in, systems for exchanging traffic information between traffic control and information centres at:
  - the national and regional levels: regions and cities (*preferably on the TEN-T network*),
  - the international level, between the National Traffic Information Centre (NDIC) in Ostrava and its counterparts in neighbouring countries;
- Support for the creation of open interfaces for providing real-time public transport information;
- Development of procedures and collection of data for the provision of minimum universal information on rail traffic disruptions free of charge to passengers and railway undertakings, e.g. information on special replacement bus services, etc.;
- Step-by-step development of an information system for searching for public transport connections which can be used to:

- find transport connections using different modes of public transport, including on maps incorporating the coordinates of all stations and stops, with the option of finding door-to-door connections,
  - provide real-time up-to-date information on the connection concerned in real time, including information on disruptions (e.g. delays),
  - provide information on fares, with the possibility of taking into account the need to obtain best value for money when searching for a connection,
  - make comparisons, in terms of travel time and value for money, between using public transport and using the car, or a combination of the two modes,
  - obtain an on-line display of the results of searches made on multiple platforms such as the Internet, GSM, etc. via a user-friendly interface,
  - link into similar systems in neighbouring countries;
- Linking-up of ticketing systems, with the emphasis on the possibility of reserving a specific seat (hitherto this has been possible only in domestic reservation systems; it is not possible when connected to the reservation systems of other railways, as seats are allocated automatically);
  - Support for the introduction and development of electronic ticketing systems for public transport;
  - Support for reciprocity as regards the reading of 2D codes on tickets; exchange of keys and reciprocal recognition of tickets bearing such codes (Czech Republic, Germany, Austria and Slovakia);
  - Investigation of the possibility of international electronic ticketing in the context of public passenger transport systems;
  - Support for the introduction, in major conurbations, of intelligent stops for urban and regional transport services; these would be the busiest stops and would provide information on actual arrival and departure times and, if appropriate, about onward connections.

## **2) Priority area II under the ITS Directive**

### **PRIORITY AREA II**

### **OTHER ACTIONS**

Continuity of traffic and freight management (not priority)  
ITS services

### **National ITS actions for priority area II:**

- Ensuring conditions for the continuity of traffic and freight management ITS services on trans-European transport networks and in conurbations;
- Deployment of ITS to minimise the risks of bottlenecks and high-risk traffic events and

to improve emergency management;

- Support for systems that can be used for the monitoring and operational management of public passenger transport vehicles;
- Exchange of train composition information between the various information systems of passenger transport companies;
- Deployment of ITS which give priority to selected groups of vehicles (public transport, IZS, etc.);
- Support, in conurbations, for the development of systems informing drivers about the estimated availability of parking spaces and their accessibility in terms of time and with regard to the defined destination;
- Deployment of technologies to optimise and manage the use of parking areas for HGVs and commercial vehicles (intelligent parking), including GNSS-based technologies;
- Deployment of technologies to facilitate planning and approval processes for the carriage of consignments requiring special care or supervision;
- Support for the development of systems for monitoring the condition and position of consignments, vehicles and mobile equipment, which could also be used to assess faults on the vehicle or changes in the condition of the consignment which could endanger the safety of road or rail traffic;
- Use of GNSS for road transport in towns and cities;
- Support for research activities aimed at the dynamic optimisation of vehicle routing based on the on-line transmission of information on current traffic conditions, taking into account issues such as the overall coordination of heavily trafficked junctions, direction of traffic on heavily congested sections of roads, etc.
- Development of rail transport interoperability in the field of railway traffic management.

### **3) Priority area III under the ITS Directive**

#### **PRIORITY AREA III**

ITS road safety and security applications

#### **PRIORITY ACTION (D)**

Harmonised provision of an interoperable EU-wide eCall

#### **PRIORITY ACTION (E)**

Provision of information services for safe and secure parking places for trucks and commercial vehicles

#### **PRIORITY ACTION (F)**

Provision of reservation services for safe and secure parking places for trucks and commercial vehicles

### **National ITS actions for priority area III:**

- Ensuring conditions for secure transmission and storage of ITS data;
- Development of transport infrastructure safety monitoring systems (e.g. deployment of transport infrastructure monitoring using remote sensing to monitor, forecast and issue warnings about landslides and subsidence on transport infrastructure, monitoring the condition of transport infrastructure and verifying it meets the requirements laid down in technical rules);
- Development of, and support for, road and rail infrastructure safety monitoring systems to forecast the impact and influence of weather conditions, landslides and subsidence and flooding;
- Support for the implementation of intelligent transport systems which improve the safety and flow of traffic:
  - gradual equipment of the motorway and high-speed road networks with functioning warning, information and cooperating systems; deployment of speed control systems on sections with high traffic intensities with an increased risk of bottlenecks.
  - deployment of speed metering systems on exposed sections of road;
  - support for diagnostics for travelling vehicles and data sharing between infrastructure managers and carriers;
  - support for the development of dynamic weighing systems for HGVs, as overloaded vehicles have an adversely effect in terms of the lifespan of transport infrastructure;
- Use of the possibilities offered by global satellite navigation systems to pinpoint accidents and to warn drivers approaching them;
- Support for the implementation of dynamic route-planning systems enabling emergency response vehicles to reach the intervention site in emergencies, having regard to current journey times;
- Deployment of systems for detecting and prosecuting breaches of rules relating to road safety and traffic flow;
- Organisation of campaigns and educational and training actions to raise awareness of new information and communication technologies in transport;
- Deployment of an eCall system;
- Use of the possibilities offered by ITS for increasing the safety of road transport at its interface with other modes of land transport;
- Development of systems for providing information and reservation services for safe and secure parking places for trucks and commercial vehicles;
- Deployment of systems aimed at improving orientation and for navigating in unfamiliar publicly accessible environments, and at lowering barriers preventing

access to public passenger transport by means of relevant and verified information.

#### **4) Priority area IV under the ITS Directive**

**Name of priority area**

**Priority actions / other actions**

##### **PRIORITY AREA IV**

Linking the vehicle with the transport infrastructure

##### **National ITS actions for priority area IV:**

- Establishment of methods for preparing ITS technology infrastructure for the future use of cooperative systems (incl. architecture);
- Support, in larger conurbations, for the deployment of cooperative systems giving priority to public transport vehicles;
- Support for systems which give priority to vehicles used by IZS units;
- Support for the development of automatic train control systems;
- Support for the development and installation at level crossings of 'intelligent' devices which will trigger speed warnings on rail vehicles as they approach a crossing;
- In addition to installing level-crossing safety devices, support for the development of cooperative systems providing warning information to road users in real time about rail vehicles approaching level crossings, by means both of variable-message traffic signs and of personal or vehicle navigation systems;
- Support or R&D in the field of automated systems capable of responding swiftly to emergencies occurring on infrastructure, the basic elements of which will be vehicle and infrastructure components, e.g. creation of conditions for establishing an ITS ensuring cooperation between infrastructure and autonomous vehicle navigation systems, etc.