

# **Second Report of the Portuguese State**

**IN ACCORDANCE WITH ARTICLE 17(2) OF DIRECTIVE 2010/40/EU**

May 2013

## **Second Report from Portugal in accordance with Article 17(2) of Directive 2010/40/EU on the national activities and projects relating to Intelligent Transport Systems (ITS) planned for the coming 5 years.**

### **I. Framework**

Portugal transposed Directive 2010/40/EU of the European Parliament and of the Council of 7 July 2010 into national law through Law No 32/2013 of 10 May 2013 which sets out the system with which the implementation and use of Intelligent Transport Systems in road transport, including at interfaces with other modes of transport must comply.

Recognising that Intelligent Transport Systems and Services (ITS) play a relevant role in achieving the aims of the mobility, accessibility and transport policy, Portugal adopted a proactive attitude to implementing such systems and developing new mobility technologies and services more than a decade ago.

Further to this commitment, the first report sent to the European Commission, as established in Article 17(1) of Directive 201/40/EU, sought to provide complete and thorough information on the instruments adopted to achieve these goals and the respective results.

The changes in recent years with regard to the economic-financial climate both internationally and in Portugal have created a situation of uncertainty and limits on resources which are restricting investment capacity and increase the degree of uncertainty with regard to policy options in the next 5 years and related strategic planning. These factors significantly limit the scope and content of this report.

In 2008, when the European Commission started the consultation process to draw up the European ITS Action plan, and between 2009 and 2010 when discussion on this subject was taking place within the scope of the Working Party on Transport – Intermodal Questions and Networks of the permanent representatives to the Council, and at the different meetings of Transport Ministers in which the Plan and the respective Directive were analysed, Portugal was not only an active participant but also adopted a solid posture of collaboration and presented proposals.

More specifically, Portugal raised its concerns as regards the following aspects:

- ↳ Essentially road based approach, which (except at interfaces) would largely be against the political and technical option of promoting the multi-modality and interoperability of systems, in terms of the functioning and development of the different modes of transport;
- ↳ The undervaluation of public transport and sustainable mobility, with emphasis on components and services relating to road infrastructure management;
- ↳ The conflict between the priorities established in the Directive and those of each Member State;

- ↪ The non-safeguarding of systems already implemented and in operation; a concern which was minimised when they were specifically included in Annex II (principles for the specifications and implementation of ITS);
- ↪ The uncertainty of different measures and actions and their aims with regard to territorial scope, (applicable only to trans-European networks or covering other networks, namely the urban network) and sectoral coverage, (only for passengers or to include freight as well)

Naturally, the European ITS Action plan and the respective Directive, constitute an important step in the promotion and consolidation of the role of ITS in accessibility, mobility and transport policies.

In addition to placing ITS on the agenda of European and individual Member State policy making, the Directive established procedures which:

- ↪ provide guarantees to the different interested parties – with regard to comitology and through an Advisory Group, through cost-benefit analyses required to consider different variables and through the reinforcement of the definition of specifications and standardisation;
- ↪ meet and help overcome factors which impede and block investment – the guarantee of confidence in the technological solutions, their working life and updating (ensuring a return on investment) and the interoperability of services and systems.

Furthermore, the European plan and the Directive, by setting priorities, give a clear signal to markets and R&D with regard to direction to take, trends and foreseeable investment.

## **II. SUMMARY OF THE ITS SITUATION IN PORTUGAL**

In accordance with Article 17(1) of Directive 2010/40/EU, Portugal presented its report on the national situation with regard to the development and implementation of ITS, particularly those relating to 'priority areas'.

Further to this report, and also in relation to the situation and promotion of ITS in Portugal, it is considered important to highlight a number of projects and initiatives already underway and the 'transport ecosystem' initiative due to the opportunity they represent. Finally, it is important to note some trends and limiting factors relating to ITS and accessibility, mobility and transport policies.

### **A. *Some new projects and initiatives already underway***

#### ***i. Open Roads***

*OpenRoads* is a technological solution which allows an integrated approach for the management and supervision of performance of the road network with regard to operation and maintenance.

*OpenRoads* allows all information on incidents and the state of repair and maintenance of the road network, broken down into sub-sections, direction and lanes to be gathered with a granularity of 100 metres, every day and at all times.

This approach had 2 practical implications: the need to analyse vast amounts of data and to ensure the exchange of information between the parties involved (concessionaire/grantor or concessionaire/concessionaire) in an interoperable and standardised manner.

For this purpose, a functional architecture was developed for a National Road Datawarehouse, and DATEX II was adopted as the language to exchange data in line with the most recent European developments in the field of Intelligent Transport Systems (ITS).

The aim was to safeguard the investment already made by concessionaires, which had led to a diverse range of specific technological structures and platforms. *OpenRoads* was developed as a flexible, non-intrusive management tool, respecting the work of road sector agents.

By using *Datex II*, *OpenRoads* places Portuguese road administration in a leading position with regard to our European counterparts in the area of infrastructure data processing.

#### ***ii. Interoperability of electronic tolls between Portugal and Spain***

Within the scope of interoperability of electronic tolls between Portugal and Spain for the payment of motorway use, a pilot scheme is already in operation which covers a series of users involved in operational tests led by *Via Verde*.

The tests started on 1 October 2012. They are being conducted by selected users invited by Via Verde. Extension to other users will only be offered after the tests have been concluded and validated.

Presently, in Portugal, the tests are taking place on the A3, A4, A7, A11, A28, A32, A41 and A43 motorways. In Spain, testing is on the Galician motorway which links the Portuguese border to A Coruña (AP9).

The system allows vehicles to use the same Via Verde devices used on the roads in each country, without any additional requirement. Portuguese vehicles can thus go through tolls in Galicia and Spanish vehicles can drive in the opposite direction and both use the same means of payment as they use in their own countries. This is a solution intended to be permanent and is in line with the creation of the European Electronic Toll Service.

### ***iii. ODS – Obstacle Detection System for Level Crossings and detection of hot axles and wheels on trains***

Since 2005, with the main aim of increasing safety and operating conditions, 4 systems have been developed to detect obstacles on level crossings (LC). The systems detect obstacles larger than  $0.5 \times 0.5 \times 0.5 \text{ m}^3$  – after the half barriers have closed. In the event that an obstacle is detected, suitable means are activated so as to immobilize approaching trains before they reach the LC.

Also with the aim of increasing safety and operating conditions, systems to detect hot axles and wheels on trains have been implemented. The systems detect and identify the existence of axles and wheels running at abnormal temperatures on rolling stock when it passes through measuring stations. The data gathered by the measurement units is sent to a central server which establishes an interface with a technical supervision system and command and control systems – the duly processed information is then forwarded to the operators at Operational Command Centres (OCC) and Centralized Command Centres (CTC) as an alarm, whenever axles and wheels with temperatures above established limits are detected, allowing the operators to act accordingly.

### ***iv. ITS Call 2012***

In a continuation of the ITS implementation work carried out in phases I and II of the Easyway programme, many States are now further expanding their systems and services and modernizing equipment, promoting new forms of cooperation.

The ITS European platform EIP has come about as a result of the need to offer standardised supply and management of road transport in Europe based on demand for consensus and harmonized effort. The platform will combine resources from all EU agents, Member States as well as public and private road service operators in a joint effort to implement standardised ITS services.

The European platform will serve as the central site on which to build consensus in Europe on its implementation among road service operators as well as allowing other interested parties from both the public and private sectors to be connected.

As a central point for the implementation of an ITS transport policy, the platform follows methodology referred to as horizontal monitoring and project driving.

Among the different initiatives underway with regard to this project in the EU, of note in the area of the Trans-European Transport Network TEN-T, is the Multi-annual Work Programme which seeks to grant subsidies in INTELLIGENT TRANSPORT SYSTEMS (ITS) INCLUDING THE EUROPEAN ELECTRONIC TOLL SERVICE (EETS).

In replying to the ITS call 2012, which is awaiting the conclusion of the application assessment process, Portugal may participate in a consortium in 2 corridors of the 9 which are under tender, more specifically, MEDTIS led by France and Atlantic ARC led by the United Kingdom.

### ***B. The 'Transport Ecosystem' initiative and Directive 2010/40/EU***

In accordance with Article 17(1) of Directive 2010/40/EU, Portugal presented its report on the national situation with regard to the development and implementation of ITS, particularly on systems for 'priority areas'.

Further to this report, and also in relation to the situation and promotion of ITS in Portugal, it is considered important to highlight the 'Transport Ecosystem' initiative due to the opportunity it represents.

The Transport Ecosystem is part of the ITS-Portugal association whose mission is to promote and publicise Intelligent Transport Systems and Services.

The Transport Ecosystem currently brings together a highly representative group of entities (more than 80), from the public and private sectors, giving it a unique position of strength.

This open initiative is based on a collaboration model which stimulates the sharing of knowledge and the maximising of synergies among the different players in traditional transport sectors – Airports, Maritime and Ports, Rail and Road, whose experience and knowledge allow new approaches to the sustainable creation of value to be identified.

Fully aware of the importance of innovation as a strategic value for the mobility and transport sector and that the current financial environment favours initiatives which promote cooperation and the sharing of know-how as essential values, the Transport Ecosystem initiative has also operated as a forum to promote the creation of value in Portugal, thus contributing to the sustainability of the Portuguese economy.

Among the strategic aims of this initiative, in line with the implementation of European Directive 2010/40/EU, of note are the following, in accordance with priority actions:

#### **a) Information on multi-modal travel;**

Improve the efficiency of the inter-modal system for mobility

- i. Provide competitive advantages with regard to the performance of the combined supply of transport, including infrastructure and level of service, based on principles of sustainable economic development and social and territorial cohesion, nationally and in Europe

Improve comfort in 'door-to-door' travel

- ii. Contribute to the removal of barriers to transport, whether they are bureaucratic, administrative, legal or technological by simplifying and standardising processes and through a focus on multiple suppliers

**b) Real-time information on traffic;**

Improve the Supply, Reliability and Availability of Information

- i. Promote the availability of universal information from the transport sector on supply, quality of the infrastructure or the relevant level of service at the right time and in the right place.

**c) Availability of data and procedures for the provision of minimum universal information on traffic, relating to road safety which is free for users;**

Improve Safety and Security

- i. Promote the implementation of initiatives and actions which follow the main guidelines of standard procedures for safety and emergency response, through the ongoing improvement and continuous assessment of vulnerabilities so as to ensure the lowest risk possible to human and material resources during operation

**d) Harmonised provision of an EU-wide interoperable emergency call service;**

Ensure the implementation of measures which allow the creation of the service, including a pilot scheme which will be tested during 2013/2014.

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***C. ITS in Portugal and a number of trends in their evolution***

As has already been mentioned, particularly in the first report, Portugal has already made considerable effort in implementing new technologies and Intelligent Transport Systems and Services, always adopting international technical standards, whenever they exist, and the principle of interoperability of the solutions chosen.

Such an example is the evolution of the Datex platform to share national road network data or the conversion of emergency request centres in accordance with the *eCall* project.

Moreover, Portugal has provided a significant part of its passenger transport service with Operational Support Systems, passenger information (very often in real-time) and contactless ticket systems.

Although all road and rail infrastructure managers are required to use the same data protocol, they are not required to make this data available or share it. Furthermore, the ITS of transport operators, complying with the respective standards, are not necessarily interoperable with regard to data structure.

These two facts require priority attention in coming years if interoperability and data exchange are to be promoted. It is felt that today, installed capacity exists which would allow the capability and potential of ITS to be expanded in numerous ways, features which are not currently being used effectively.

At the same time, in recent decades, significant progress has been seen with regard to technical and academic competences. The national R&D system is today part of the international research network, both at a university as well as a research level.

Portugal is currently a country in transformation and over the last 10 years has seen significant advances in technological production capability. It is now able to deal comfortably with the considerable challenges posed by internationalisation in communications technologies and as a consequence, in ITS. Recent R&D projects and initiatives – in electric mobility and the management of infrastructures and integrated systems, among others – have proved to be interesting both from an economic point of view and with regard to exports.

Therefore, further priority areas of intervention include reinforcing Portugal's focus on and availability for partnerships, R&D projects and Intelligent Transport Systems and Services projects, with good characteristics for testing new solutions and strengthening our positioning as a key player between solutions for Europe and the USA and the BRIC countries.

The urgent need to make mobility and transport more efficient, competitive and sustainable requires renewed attention to urban mobility – as is in fact recognized by numerous European Union documents, including the White Paper on Transport and the Green Paper towards a new culture for urban mobility, among others.

Naturally, issues relating to energy – energy consumption by the transport sector in Portugal represented around 40% of final energy consumption in 2009 – and the environment – transport in Portugal is responsible for approximately 26% of greenhouse gases – are key considerations in relation to technical and political options for mobility and transport and ITS are a vital tool in their reduction.



### III. PORTUGAL AND ITS. PRIORITIES AND GUIDELINES FOR THE NEXT 5 YEARS

#### A. AIMS AND PRIORITY AXES

The approaches of the Action Plan for the Deployment of Intelligent Transport Systems in Europe and that of the respective Directive, are based mainly on the concern to reduce impacts and negative externalities, particularly in relation to road transport, prioritizing measures and actions with direct implications especially for road safety and congestion – minimizing economic, social and environmental problems while also improving air quality, among other aspects.

With this in mind, priority actions promote emergency services and the gathering and processing of data so as to improve infrastructure management.

These options govern the direction of part of the use of resources and work in coming years, not just of the European Commission, but also of every Member State.

**In coming years, ITS policies in relation to those for accessibilities, mobility and transport in Portugal are based on the ambition to promote Intelligent Mobility, with the following general aims:**

- **Promote sustainable mobility** – updating services for passenger and freight transport, eliminating breaks in networks, guaranteeing full and reliable information in real-time, adding new services and functions to conventional transport and systems, developing new mobility services which meet the specific needs of target groups, structuring travel chains, integrating services, timetables and physical infrastructures, promoting inter-modality including all the modes of transport as well as soft forms of public transport.
- **Minimise the negative externalities** of transport, **improve the efficiency of transport** introduce new technologies and **speed up decarbonization and reduce energy needs;**
- **Increase technological R&D and knowledge, maximising its economic effects** and exports.

With these aims in mind, the uncertainty with regard to the economic-financial environment and the comfortable situation of consolidating ITS and technological capabilities and research and knowledge, the priority areas of intervention and action for ITS in coming years are as follows:

- I. Maximize the potential of already implemented ITS;
- II. Make the user the central focus of ITS
- III. Reinforce the role of ITS as effective contributors to real knowledge on mobility and as instruments to support planning, regulation and inspection of the transport system and the management and maintenance of infrastructures by authorities
- IV. Establish a national cluster of technologies, products and services for intelligent mobility;

V. Integrate the requirements and specifications of Directive 2010/40/EU in ITS implementation and development policy in Portugal

From these combined priorities, it is expected that, despite the uncertainty of the economic climate, Portugal will improve levels of accessibility and the quality of mobility, with minimum impacts while also reinforcing the economic development associated with technologies and innovation

**B. MEASURES WHICH PROMOTE PRIORITY AXES**

It is Portugal's aim to have collaborative and integrated services and systems which are user-focused, maximising the fact that individuals, vehicles and infrastructures are connected in an intelligent manner, georeferenced and in real-time, in authentic 'social mobility networks'. These networks will allow users to manage, share and plan their needs and preferences for individual mobility and for freight in a more effective and efficient manner both for themselves and for society. This will also help 'sound out mobility' for the regulation, planning, oversight and management of networks and infrastructures.

The priority axes bring together measures which transverse the different modes (multi-modal), common to passengers and freight and which may coincide in more than one axis. The following measures are of note:

– **Interoperability and sharing of data, an indispensable requirement for 'maximising the potential of already implemented ITS'**

In recent years, many transport service providers or infrastructure managers have been implementing ITS, but which follow individual corporate logic. This means that although they respect the standards which allow information exchange, the data structure makes this exchange unviable.

At the same time, even when interoperable data equipment, technologies and structures do exist, many of the concession processes do not require data to be exchanged, and such information is considered to be confidential and a competitive advantage from a corporate perspective.

Therefore, there is huge potential in the systems already installed which is simply not being used, either due to an absence of data structure definition or because it is policy to not share data.

**Overcoming these limitations, which does not require investment in equipment, will bring about significant improvement for general mobility, in network management, in the operation of transport services and in the information required to choose the best travel option (passengers and freight).**

Examples include:

- Contactless ticketing systems which allow the development of combined tickets and real transport networks, integrating different modes and operators;

- operational support systems and passenger information (with integrated information which is not broken down into single operators), allowing full statistical analysis on quality of services and demand for transport as well as providing management support;
- traffic information on road safety (as established in the ITS Directive), congestion and route optimization both before and during the trip, regardless of the entity managing each section.
- evolution of the *Open Roads* solution, already designed to be able to include data mining capabilities and converge with outside databases. Initially, a series of services and management operations will be made available to partners. Later on, benefits may be extended to a broader public, providing or helping to provide – new mobility services which will accompany their own evolution and include new solutions.

– **Transparency of systems, making 'the user the central focus of ITS'**

Sustainable mobility solutions very often depend on overcoming lack of knowledge, lack of trust, discomfort and stress, all related to an absence of information and real knowledge and an incorrect perception of real costs and waiting times

When adopted and developed by operators, infrastructure managers and regulators, with a view to meeting their own needs, these ITS have immense potential to make mobility as a whole more transparent, intuitive and accessible. Therefore, practices relating to sustainable mobility and other constraints which make the transport system less effective and efficient and with higher costs for society will be also eliminated.

**By adding a user-based approach, many of the systems will clearly promote and facilitate the public transport system and provide solutions which combine with soft modes and even with individual transport, complementing and promoting sustainable mobility and reducing the negative externalities of transport.**

In short, the aim is to accept the importance of the user as a structural driver in the design of systems so as to include commuters and business and leisure travellers, managers of logistics undertakings, receivers and dispatchers of freight, political decision makers with tax, environmental and other responsibilities and sections of the public with relevant challenges for inclusion.

With this in mind, measures could include:

- making information available on the real costs of mobility, with access to compared solutions, both with regard to public transport for passengers and freight, in the use of infrastructures and individual transport, with access to integrated information on payments made (where it is possible to see the cost of the transport, parking, tolls, vehicle maintenance, energy costs – fuel or electricity – emission fees, etc.);
- simplifying payment systems, dematerializing and integrating them (regardless of the operators and modes), and implementing mobile communications technologies and devices;

- reducing the bureaucracy of administrative procedures, integrating them into single documents, regardless of the mode and operator which undertakes the transport of freight, thus reducing times and costs.

– **Promote the use of 'sounding out' of mobility and support information for the management and maintenance of infrastructures**

The integration of information on mobility is vital for 'mobility knowledge which is relevant for planning, regulation and inspection of the transport system and infrastructure' fully respecting privacy and the anonymity of data.

ITS devices tend to be both receptors of information and services but also suppliers of information which feeds the provision of these services. i.e., the receptor of information on transport or traffic, feeds the service itself with information on location, routes and times.

The integration of all available information which affects mobility and traffic circulation, has thus huge potential for public functions and also takes into account other requirements such as those in Regulation EC No 1370/2007 and the future concession of public transport services and the definition of obligations for public transport services, as well as the promotion of multi-modality.

**This integration of information and the promotion of the regulation and inspection of transport services will also facilitate the role of standardisation bodies, the definition of ITS specifications while also promoting innovation and technology.**

Measures and actions to support regulation, inspection, management and maintenance of services and infrastructures include:

- the abovementioned '*Open Road*' solution is an effective tool in the supervision and management of a road network and its flexibility and scalability can help improve decision support systems for administrative entities and road network managers.
- systems such as Watrac (which allows freight service providers to track and monitor wagons, providing information on distance travelled, trip time and road problems). Watrac also allows rail network routes to be searched and wagon routes to be created thus optimizing their circulation;
- the consolidation of information which is currently scattered in different solutions already consolidated for individual operators and/or modes of transport will allow a vehicle to be located, arrival times to be estimated, the condition of goods to be monitored, etc., for both road and rail transport, taking advantage of its component on congestion of routes and circulation conditions;
- the reinforcement of driver safety and support systems, particularly on public transport, for driving solutions but also for vehicle door closing (an example of which is the development of CCTV systems for rear view mirror functions), among others;

- the development and integration of systems to verify driving conditions and road state, both through the automatic detection of obstacles and the conditions of the infrastructure materials;
- video surveillance systems and safety devices and disincentives for criminality, violence or terrorism on transport and at interfaces.

– **ITS as support for new mobility solutions and innovation as support for economic development.**

In recent years, Portugal has taken part in numerous R&D projects, including in the fields of mobility and transport and has played a leading role in several innovation projects, with our integrated research into electric mobility being of special note.

Industry, the academic and research sectors, service companies, transport service providers and infrastructure managers, with the support of public services, have taken significant steps to promote technological innovation and provision of services. There have been numerous cases of success and economic development and the consolidation and creation of several national clusters.

**The need to improve the response to mobility requirements, to make passenger and freight transport services more efficient and with new services which make them more attractive, the priority to increase infrastructure capacity through the use of ITS instead of through construction and physical intervention, the development of new solutions for mobility (both with regard to services and vehicles), and the importance of environmental and energy issues associated with mobility and transport are all opportunities for ITS.**

Different projects and initiatives need to be undertaken in coming years, implementing or updating measures such as:

- Eco-driving systems on public transport – motivating service providers to fit systems for real-time monitoring and driving correction and to provide information to correct errors through classroom based training programmes, promoting efficient, ecological, safe and comfortable driving;
- New rules for loading and unloading operations in urban environments – allowing, through the real-time control of vehicle parking, implementing tariffs which penalize bad practices and the permanent use of areas for such operations, thus requiring the reorganization of urban logistics and the vehicles used;
- Implementation of flexible transport solutions – which through the use of ITS will allow routes and/or services to be optimized based on the real needs of mobility;
- Making new solutions available for mobility, based on the sharing of vehicles or routes – such as with car sharing, bike sharing or car pooling which may lead to new practices and new types of vehicles (electric bicycles, Segways, or others);

- Improvement of public transport by making Internet access and travel information available along with screen entertainment in vehicles and at interfaces;

– **The priority actions defined in Directive 2010/40/EU**

The fact that the European ITS Action Plan and Directive No 2010/40/EU, after the TEMPO project (Trans-European intelligent transport systems PrOjects) in 2003 presented a draft ITS Plan, constitutes a new phase in the promotion of ITS policies in Europe.

Although not all of the actions have led to compulsory implementation, Portugal naturally would prefer to pursue them. However, differentiated timelines for completion will be required due to the country's financial capacity:

- EU-wide provision of information services on multi-modal travel;  
In addition to the systems already available, both public and private, which are used by transport service providers and infrastructure managers, several other projects are underway to develop new, integrated, multi-modal transport information systems. It is expected that evolution will continue in this field, which will naturally include the specifications defined in the Directive.
- 'EU-wide provision of real-time traffic information services' (Subparagraph b) and 'data and procedures for the provision, where possible, of road safety related minimum universal traffic information free of charge to users' (Subparagraph c):

Within the scope of the review of National Road Safety Strategy (ENSR), for 2015, measures and actions are being included which address the Directive's priority actions:

- Definition of requirements for sharing strategic traffic management information:
  - i. In order to achieve more efficient traffic management with regard to traffic circulation, the aim is to make real-time information available on alternative routes for road users through the ongoing monitoring of levels of service on motorways.
  - ii. Implementation of preferential communication standards for data exchange between entities.
  - iii. Identification of preferential means of communication and dissemination of the information.
- Definition of minimum information content to be made available to road users in real-time:
  - i. Bearing in mind the variety of information on road infrastructure and traffic, it is important to distinguish the essential minimum required for priority road safety services and for the transport of hazardous materials and/or large loads.
- Setting up of the National Traffic Information Centre
- Making traffic information available in real-time and free of charge to road users, particularly with regard to road safety.

- Automation of a Trans-border Road Traffic Management Plan
  - i. Detail and automation of already established trans-border protocols so as to minimize errors and maximise the efficiency of processes.
- Implement RDS-TMC
  - i. Setting up of an RDS-TMC table and the respective licencing for later implementation
- Variable message sign – legal framing of the Technical Instruction on Variable Message Signs
  - i. Standardise message display on variable message panels in order to comply with the basic principles of signposting and current legislation
- Harmonised provision of an EU-wide interoperable emergency call service;  
Several measures in this compulsory project have already been implemented in relation to defined specifications and will be finalised in accordance with EU requirements
- The provision of information services for safe and secure parking places for trucks and commercial vehicles (Subparagraph e) and the reservation of services for safe and secure parking places for trucks and commercial vehicles (Subparagraph f);

Actions e) and f) are not considered priority given Portugal's position on the periphery of Europe and the fact that there is regular availability of parking spaces for heavy vehicles, both in service and rest areas in the main trans-European corridors in Portugal.

However, should a service be established in this regard, it will comply with European guidelines especially with regard to the Easyway Programme and which require the formal agreement of road transport service providers.

## **FINAL OBSERVATIONS**

Intelligent Transport Systems and Services are seen as an opportunity with multiple positive effects.

The pace of their evolution will depend naturally not just on investment and public authorities but also, and to a considerable extent, on transport service providers, infrastructure managers, industry and services and the academic and research communities.

The current economic-financial environment and the uncertainty with regard to the future, significantly limit the speed of work, implementation and widespread availability of many services and systems, requiring corrections and adaptations to meet the limitations imposed by this economic scenario.