



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, xxx
SEC(2008) 3084

COMMISSION STAFF WORKING DOCUMENT

accompanying document to the

COMMUNICATION FROM THE COMMISSION

Action Plan for the Deployment of Intelligent Transport Systems in Europe

and the

Proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

**laying down the framework for the deployment of Intelligent Transport Systems in the
field of road transport and their interfaces with other transport modes**

SUMMARY OF THE IMPACT ASSESSMENT

{COM(2008) 886 final}
{COM(2008) 887 final}
{SEC(2008) 3083}

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Summary of the Impact Assessment

1. SCOPE, PROCESS AND CONSULTATIONS

The mid-term review of the European Commission's White Paper on Transport Policy suggests that innovation will considerably contribute to making road transport more sustainable (i.e. safe, efficient, clean and seamless), in particular by applying information and communication technologies: **Intelligent Transport Systems (ITS)**. Examples in road transport are dynamic traffic management, real-time traffic information and navigation devices. The present exercise focuses on **road transport** and its interfaces with other modes of transport (co-modality).

Stakeholder **consultations** conclude that the slow uptake of ITS in Europe is mainly due to a lack of a Europe-wide coverage and a consistent, harmonised deployment. ITS deployment should be a tool for achieving policy objectives and the EU should take more responsibility in coordinating ITS implementation. Among the **priorities for European ITS** policy-led deployment, a high-level coordination and agreements on interoperability have been emphasised.

2. PROBLEM DEFINITION: WHY IS THERE A NEED TO ACT?

2.1. Nature of the problem

ITS solutions in road transport are being taken up **slower** than expected and services are deployed on a **fragmented basis**. This has led to a patchwork of national, regional and local solutions endangering the integrity of the single market. Consequently, ITS cannot contribute effectively to addressing growing challenges in road transport.

- **Road congestion** costs amount on average to 1 % of GDP in the EU.
- Road transport accounts for 72 % of all transport-related **CO₂ emissions**, which have increased by 32 % (1990-2005).
- **Road fatalities** still amount to 42 953 (2006), which is 6 000 above the intermediate target set to reach 25 000 in 2010 (a 50 % reduction from 2001).

Main problem drivers include

- (1) **(a lack of) interoperability** of applications, systems and services
- (2) **(a lack of) effective cooperation** among stakeholders and an absence of vision
- (3) **unsolved data privacy and liability issues**

2.2. What will happen if nothing is done?

In an increasingly challenging environment it would be very difficult to achieve key (transport) policy objectives with the current low level of market take-up. Freight road transport will increase by 55 % until 2020 and passenger road transport by 36 %.¹ Congestion will grow. In England, for example, it is expected to reach 13 % of all time spent in traffic by 2025 (about £22 billion worth of time); in the Netherlands it would increase by 30 % until 2020². Road fatalities in the EU are likely to be at 32 500 in 2010, far above the EU target of

¹ ASSESS study for the mid-term review of the EC Transport White Paper, "Keep Europe moving", 2006.

² European Conference of Ministers (2007): Congestion: A global challenge; CEMT/ITF(2007)6.

25 000.³ CO₂ emissions from transport will grow a further 15 % until 2020.⁴ Fragmented solutions will result in a slow market development for ITS, missing the opportunity to strengthen the sector's competitiveness.

2.3. EU right to act and principle of subsidiarity

According to Common Transport and Trans-European Networks Policies (**Articles 71(1), 80(1), 154 and 155 of the EC Treaty**) the EU has the right to act. The proposed policy options respect the principle of **subsidiarity**, as trans-national deployment to achieve European and harmonised cross-border services for traffic and travel information and traffic management cannot be satisfactorily achieved by Member States. With no further EU action, Member States would continue to develop individual solutions, causing a fragmented technological spectrum that endangers harmonisation and standardisation, or would lead to lengthy processes for interoperability. Action at Community level would have benefits in terms of effects (e.g. of common rules on liability or data security) and scale (e.g. cost reductions for ITS applications due to common specifications).

3. OBJECTIVES

The general objective of this initiative is to put in place the **necessary mechanisms to foster the uptake of ITS services** for road transport and their interconnections with other modes of transport.

Specific objectives include:

- to increase **interoperability**, ensuring seamless access and fostering continuity of services
- to set up an **efficient cooperation** mechanism between all ITS stakeholders
- to solve **privacy and liability** issues

4. POLICY OPTIONS

Policy Option A (baseline scenario): no additional new action

This option takes into account ongoing Commission actions, e.g. specific research, Intelligent Car Initiative (research, technical harmonisation and awareness), support to deployment (EasyWay, CIVITAS), isolated standardisation and consultation of stakeholders. The Commission's services will continue to use financial support for research and deployment, voluntary agreements, specific standardisation mandates and (limited) regulative work - but there is little coordination between the public and private sector and between Member States.

Policy Option B: Concentration on enabling actions and coordination

Policy option B addresses the objectives through the following horizontal **priority actions**:

- (1) definition of a **functional open in-vehicle platform** allowing a multiple use of key components
- (2) setting up of a **High Level Group** as a forum for ITS stakeholders (information exchange, vision, guidelines)
- (3) definition of a framework for optimised use of **road and traffic data**

³ COM(2006)74, European Road Safety Action Programme Mid-Term Review.

⁴ European Environment Agency: Climate for a transport change. TERM 2007. EEA Report 1/2008.

- (4) ensuring **continuity of ITS services**
- (5) addressing **data security, privacy and liability issues**

Policy option B+: Option B extended with a comitology procedure

Option B+ builds on the same measures as introduced under option B but formalises the coordination aspect. The High Level Group will be replaced by:

- (1) a **European ITS Committee (EIC)**, constituted of Member States' representatives to assist the Commission in adopting specific measures in well-defined areas (i.e. the basic enabling measures of Option B) via a comitology procedure, and
- (2) a **European ITS Advisory Group** constituted of representatives from e.g. industry, transport operators, users and other relevant fora and associations, advising the Commission on business and technical aspects.

The Commission, assisted by the EIC would :

- exchange information with Member States and develop an overall vision
- monitor the development of guidelines and procedures
- within its mandate and when necessary decide on specific actions for:
 - (1) the establishment of technical requirements and specifications, in particular in the priority areas identified
 - (2) type-approval of ITS terminals, network equipment and software applications.

5. ANALYSIS OF IMPACT

5.1. Methodological Considerations

The analysis is based on qualitative evidence, supplemented by quantitative elements. All options have been compared against the reference scenario A. The **evaluation criteria** take into account both the direct and indirect impacts:

Direct impacts :

- enhancing interoperability and continuity of service
- strengthening cooperation and cooperation
- removing uncertainties regarding privacy and liability

Indirect economic, social and environmental impacts :

- economic: road congestion, competitiveness, consumers, growth
- social: road safety, employment, security
- environmental: climate change, air quality and noise, energy efficiency, co-modality

This impact assessment has been conducted for a broad and policy-defining Action Plan. Therefore it is not possible to carry out a full cost-benefit analysis of the concrete measures at this stage.

The transport model TRANSTOOLS⁵ has been used to generate additional quantitative input on possible indirect impacts, although not able to assess the direct relationship between the proposed actions and ITS deployment.

5.2. Impact of Policy Option A — No additional new actions (baseline scenario)

Interoperability and continuity of services : Operational deployment of ITS will continue to struggle with difficult access to relevant traffic and travel data, especially across borders and modes. Europe-wide deployment and harmonisation will be undermined by local initiatives and the absence of Europe-wide cooperation. As a result, consumers will be confronted with a discontinuity of services.

Cooperation and coordination : Markets will continue to suffer from a lack of vision and cooperation among key stakeholders, which will not be conducive to reductions in costs and risks.

Privacy and liability issues will differ according to the service provider, operator or Member State where the service is provided.

TRANSTOOLS simulations indicate that:

- road traffic congestion, expressed as congested vs. total driving time, will increase from 24.3 % (2007) to 24.9 % (2012) and 28.6 % in 2020 for EU-27
- fuel consumption and emission of CO₂ will increase by 15 % by 2020 (EU-25)
- **total external costs** (congestion, accidents, noise, air pollution and climate costs) will rise from €161.8 billion in 2007 to €193.3 billion by 2020.

⁵ www.inro.tno.nl/transtools/index.html

5.3. Impact of Policy Option B: Concentration on enabling actions and coordination

(1) Definition of a **functional open platform** for (in-vehicle) ITS Services

A modular approach to ITS deployment, including an interoperable telematics on-board platform with open functionalities and conceived for plug-in integration of nomadic devices will enhance synergies and cost reductions.

(2) Enhancing cooperation and coordination by setting up a **High Level Group**

An ITS HLG with representatives from all sectors would help generate a clear vision as to the role of ITS in European (transport) policies, while a road map for Europe-wide deployment would reduce current uncertainties (exploitation, market prospects). Coordinated investments by the public sector will trigger private sector initiatives and developments. Such a voluntary coordination mechanism presents some risks: the inability to control processes and uncertainty as to how far recommendations would effectively be implemented.

(3) A framework for **optimised collection, exchange and integration of road and traffic data**

will extend functionalities of existing services and improve their level of quality (accuracy, coverage, completeness).

(4) Ensuring **continuity of services** across borders and modes

will enhance co-modality and foster the greening of freight corridors, since real-time access to data, and agreed formats for data exchange and data integration, are a prerequisite for provision of seamless support to travellers and hauliers.

(5) Addressing **privacy and liability issues**

should boost a series of ITS applications (e.g. Lane Departure Warning, Collision Avoidance and Emergency Braking Systems) whose broader market take-up will lead to a significant reduction of accidents.

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Option B will generate the following indirect impacts:

- (a) A single platform with a unique, certified and safely-positioned interface should reduce driver distraction and trigger important cost reductions due to synergies, resulting in **safety-enhancing applications** penetrating the market more rapidly. eCall, which aims to reduce the number of fatalities by accelerating post-crash medical assistance, would profit from such add-on deployment, leading to important decreases in fatalities (by 5-15 %⁶) and in severe injuries (by 10-15 %) across EU-27 by 2020.
- (b) **Traffic management** strategies will be more easily extended to interconnecting networks, e.g. urban/ interurban road networks, across complementary transport modes.
- (c) More reliable **real-time travel and traffic information** will enhance efficient and flexible route planning, time savings and pollution control on sensitive parts of the road network.
- (d) A widespread application of typical ITS-linked **e-freight** measures is expected to result in time savings of 10 % and financial savings of 8 %, while

⁶ eCall SEISS Study (2006).

productivity rates should increase by 3 -10 % and freight logistics costs would decrease by 2-3 %.⁷

- (e) Other **public sector applications** can be implemented easier , e.g. compliance with social regulations (rest times), transport of live animals, internalisation of external costs, dangerous goods monitoring, electronic fee collection, digital tachographs and eCall.

TRANSTOOLS simulations predict that road congestion would decrease by about 2.5 % and accident costs by 7 % while enhanced cooperation and synergies would result in an additional reduction of 1 % of overall external costs.

5.4. Impact of Policy Option B+: Option B extended with a comitology procedure

Under the policy Option B+ Member States’ delegates would be invited to agree with their peers on a shared vision and on priorities for Europe -wide deployment of ITS, on harmonisation of services and their minimum requirements (voluntary approach), on priorities for legislative work, standardisation and possible EC funding. The main gain would come from better cooperation, **faster decision-making procedures** and shorter times for processing legislative work.

ITS applications will be deployed faster, leading to quicker savings on travel times, accidents and emissions. Option B+ would also **reduce the risks** associated with working with a High Level Group recommending purely voluntary actions.

Industry would benefit from a clear policy and vision and could build value -added services onto the (mandatory) introduction of specific ITS measures of public interest. Consumers would benefit from a wider availability of services related to driving safety and comfort , and lower prices thanks to economies of scale.

Since Option B+ would accelerate the implementation and deployment of ITS applications, it can be assumed that the accumulated benefits will be higher by 2020.

5.5. Administrative costs

Administrative costs for the European Commission include the setting up of a more intense cooperation among stakeholders; coordinating financial support for research, real -life testing and European-wide deployment; defining functional requirements and organising their standardisation; conducting legislative work and monitoring progress. Costs might be higher for Option B+ (€70 000 p.a.) compared to Option B. A faster reduction of external costs, though, would immediately result in macro-economic savings of billions of Euro.

6. COMPARISON OF POLICY OPTIONS

Impacts on...	Interoperability	Cooperation	Privacy & liability
Option A no additional new action	<i>reference</i>	<i>reference</i>	<i>reference</i>
Option B enabling actions and coordination	++	+	+
Option B+ extended with comitology procedure	++	++	+

⁷ COM(2007) 607 Freight Transport Logistics Action Plan.

Comparison of direct impacts

Option B and B+ represent major improvements compared to Option A. **Option B+** scores higher on the issue of cooperation and provides an optimal basis to move on rapidly. By giving the Commission the possibility to propose legislation via comitology after intensive stakeholder consultations, the risk of not delivering the expected results within the given timeframe is largely minimised.

Impacts on...	Economy				Society			Environment		
	Congestion Reduction	Competitiveness	Consumers	Growth	Road Safety	Employment	Security	Climate Change	Air Quality / Noise	Energy Efficiency
Option A no additional new action										
Option B enabling actions and coordination	+	+	+	+	+	+	+	+	+	+
Option B+ extended with comitology procedure	++	++	+	+	++	+	++	+	+	+

Comparison of indirect impacts

The analysis confirms that compared to the baseline scenario both Options B and B+ will deliver a positive overall impact towards all of the policy objectives. In Option B+ the expected positive impacts on congestion, road safety and emissions will be reached earlier, showing this option to be more effective by saving more lives and more time otherwise spent in traffic, and by lowering CO₂ emissions.

Considering both the direct impact (boosting uptake of ITS) and indirect impact (support for economic, social and environmental policies) the **preferred option is Option B+**, because better and faster results will be obtained through the strong cooperation aspect and the potential to speed up agreements on particular issues hampering deployment of ITS across Europe.

The proposed legal instrument to set up this framework would be a Directive, which recognises the different levels of ITS use and deployment, while at the same time leaving the power and responsibility to the Commission to define, with the European ITS Committee, the technical details in support of the implementation of the Directive.

7. MONITORING AND EVALUATION

It is necessary to monitor and evaluate any new policy on ITS. The full version of the impact assessment provides a list of possible indicators to measure progress on the general and specific objectives. It is proposed that a **progress report** be produced by 2012.