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FINAL REPORT

MID-TERM EVALUATION OF THE IMPLEMENTATION OF THE ITS ACTION PLAN



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THE ITS ACTION PLAN**

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EXECUTIVE SUMMARY

Introduction

This report contains the findings of the “Mid-term evaluation of the implementation of the ITS Action Plan” commissioned by DG MOVE under contract MOVE/CE/SER/2011-347/SI2626273 and performed by Ramboll Management Consulting between July 2012 and February 2013.

Background

‘Intelligent Transport Systems’ (ITS) refers to “applying information and communication technologies (ICT) to transport. These applications are being developed for different transport modes and for interaction between them (including interchange hubs).”¹ ITS can play a significant role in reducing negative effects of transport and therefore are seen as a major contributor for fulfilling the European Union’s aim of a sustainable and well-functioning transport sector.

Different transport sub-sectors (both across and within different modes) have different preconditions for implementing ITS measures, but benefits are only fully harvested if the efforts are streamlined across Europe and beyond. Uncoordinated efforts may result in national or regional solutions that are not interoperable with each other (so-called “silo solutions”), resulting in a patchwork of ITS applications and services and hence preventing efficient and optimal mobility across borders for transporters and travellers. Therefore, a pan-European approach is needed to secure geographical continuity and interoperability of services and systems.

Given this background, the Action Plan for the Deployment of Intelligent Transport Systems in Europe (the so-called ITS Action Plan) was adopted by the European Commission on 16 December 2008.² It sets out an approach for the European Commission to carry out its efforts for a faster and more coherent implementation of ITS in road transport in Europe and interfaces with other transport modes.

The ITS Action Plan pursues three main policy objectives for transport and travel that arise from the challenges indicated above: transport and travel need to be cleaner, more efficient, as well as safer and more secure.³

The implementation of the ITS Action Plan is a concerted effort of several European Commission services (DG MOVE, DG CONNECT, DG RTD, DG ENTR and DG CLIMA) under the general coordination of DG MOVE.

¹ Action Plan for the Deployment of Intelligent Transport Systems in Europe [COM(2008)886]. The Commission in Directive 2010/40/EU expands the definition of ITS to: “Intelligent Transport Systems’ or ‘ITS’ means systems in which information and communication technologies are applied in the field of road transport, including infrastructure, vehicles and users, and in traffic management and mobility management, as well as for interfaces with other modes of transport”

² Communication COM(2008)886

³ As presented in point 4.4 of the ITS Action Plan

Methodology

The mid-term evaluation examines and assesses a large range of evaluation criteria, i.e. implementation (progress achieved), relevance, effectiveness, efficiency, utility and sustainability.

The cut-off date for data collection for the evaluation was 30 November 2012; developments that occurred after this date are not reflected in the findings of this report.

The operational level of the ITS Action Plan is comprised of 24 actions that are detailed and described in the plan; these represent the main analytical unit of this evaluation study.

Main Findings

Implementation

Overall, the implementation of the ITS Action Plan is advanced: four actions have been completed and a significant proportion of the on-going actions are close to completion. In general it can be said that the work is either completed or over 50% completed for the majority of the actions.

With regard to completion of actions in terms of the timeframes proposed in the ITS Action Plan, most on-going actions are experiencing delays. The delays are motivated, for the most part, by the fact that the ITS Action Plan's objectives were overly ambitious in relation to its complexity, as well as to the limited human resources dedicated to the task of implementing the plan.

A strong characteristic of the ITS Action Plan is that it builds heavily on stakeholder involvement and on the various ways in which stakeholders are invited to participate in all actions.

Overall, for sufficiently advanced actions, the ITS Action Plan does have a good level of visibility, with its progress reported and followed among the ITS stakeholder community. The evaluation results showed that survey respondents and, more generally, the ITS community are aware of the ITS Action Plan, its content and its progress.

Generally, the European Commission made considerable efforts to disseminate the results of the sufficiently advanced actions. For some actions, dissemination was limited to a publication on the Europa website and a presentation during an event (e.g. yearly ITS Conference), and as such was probably insufficient to generate results.

Stakeholders and the ITS community indicated that the communication on the ITS Action Plan was not always sufficiently clear, leading to a lack of understanding with respect to its progress and expected final outcomes.

The main successes/positive elements with respect to the implementation of the ITS Action Plan were:

- Good cooperation and involvement of the various stakeholders during the course of implementation of the ITS Action Plan.
- Considerable positive contribution of the ITS Directive and the ITS Action Plan to increase awareness of ITS.
- The role the ITS Action Plan played as a roadmap for structuring work conducted in support of ITS development and deployment.

Main difficulties faced in the implementation of the ITS Action Plan concerned the management of a number of actions that suffered from a lack of a detailed work plan, clear milestones and/or intended final output. These difficulties could be due to the fact that the ITS Action Plan was overly ambitious compared to available resources. European Commission staff ended up rushing

to meet unreasonable targets, in the end resulting in limited micro-management of individual actions, implementation delays (in terms of the timelines set in the ITS Action Plan), and uncertainties on what had to be achieved.

Apart from this, there were no major recurring difficulties or issues concerning the implementation of the ITS Action Plan. Obstacles tended to be specific to each action and the nature and complexity of the topic at hand. Overall, a great deal of work was done to overcome those difficulties.

To improve the implementation of the various actions, a number of horizontal recommendations were formulated that build upon the positive aspects, as well as the lessons learned from the difficulties encountered in implementing the ITS Action Plan. These are the following:

- The ITS Action Plan was built around a strong participatory approach aiming at engaging stakeholders in the work. This approach should be maintained and enhanced, especially in the process of drafting specifications, impact assessments, and setting the ground for future policy measures. For specific actions (e.g. Actions 1.1 and 1.4 as well as Action Area 4 as a whole⁴), the establishment of a stakeholder platform is recommended.
- In line with the horizontal strategy of a participatory approach for stakeholders, dissemination activities are very important. The European Commission should make sure that the website is regularly updated with the results of studies, minutes from public meetings and workshops, updated work plans, etc. More specifically, in the preparation of workshops, participants should be sent the material beforehand in order to have the time to study it prior to the meeting, as well as to be in a position to actively contribute to the discussion.
- For management and communication purposes, a number of actions would benefit from a better defined work plan. This is especially important for the delayed actions and for actions with unclear final outputs or an "open ended" interpretation of operational objectives. The revised work plans should be built around realistic targets in terms of timing, taking into account limitations related to the availability of human resources.

Effectiveness

Understandably, the Action Plan is still on-going and, as such, a large majority of actions have not yet achieved their operational objectives. In five actions, however, the operational objective is considered fully achieved. This concerns Actions 1.5, 4.4, 6.2, 6.3 and 6.4.

One of the major contributions of the Action Plan so far was to bring ITS to the table, generate debates and discussions, and share knowledge within the stakeholder community. Due to involvement of different parties, many views and existing barriers to ITS deployment could be discussed and shared. In this respect, it is clear that the ITS Action Plan, along with other initiatives such as Easyway and the implementation of the Directive, contributed greatly to increased awareness of the barriers to deployment of ITS and its potential benefits.

The ability of the ITS Action Plan to produce more tangible effects and impacts is linked to the follow-up and uptake of actions and results. The findings of this evaluation are overall positive with respect to the levels of follow-up and uptake. Follow-up activities at the EU and national levels are already taking place for ten actions⁵ and are expected in the short term for another five actions.⁶ The results (final or intermediary) of eight actions have already been taken up and the

⁴ See section on recommendations for more details

⁵ They included, for instance, the development of specifications under the ITS Directive (e.g. Actions 1.1, 6.1), follow-up work conducted by the iMobility forum (Actions 1.3, 3.4), AETIS (Action 2.4), eMaps (Action 1.3), Easyway (Action 2.1), or continuity in long-term actions (Actions 2.2 – eFreight and Action 3.2 – eCall)

⁶ For instance, likely follow-up of study recommendations by the European Commission (Actions 1.2, 5.1) and the continuation of the work announced by Ertico (Action 6.4)

results of an additional two actions are expected to be taken up soon. This is, overall, a positive result, especially when taking into account the degree of advancement of implementation of the ITS Action Plan.

As the ITS Action Plan is currently on-going, a large number of actions have yet to show effects in terms of deployment of ITS. The large scope of the ITS Action Plan, combined with limited resources, resulted in slow progress and delays in a number of actions.

Overall, evidence shows positive impacts in terms of interoperability of applications and systems and continuity of services in the EU, but more limited impacts in terms of solving privacy and liability issues.

Limited evidence of socio-economic impacts was identified. The analysis of individual actions revealed that large scale deployment must still take place, and without it there will be no socio-economic impacts.

Efficiency

In terms of concrete deliverables, outputs were generally achieved at reasonable costs due to the allocation of limited resources in the implementation of the ITS Action Plan. More specifically, it was assessed that the studies conducted in the context of the ITS Action Plan delivered good value for money and were a cost-effective starting point for many actions.

Relevance

Stakeholders acknowledged the necessary leadership of the European Commission in the area of ITS in Europe, and found the objectives of the ITS Action Plan, at the level of actions and action areas, to be highly relevant.

The economic downturn since 2008 has significantly impacted the stakeholders' needs. Stakeholders, in particular policy-makers, demanded stronger evidence of the benefits of ITS and better incentives to deploy ITS applications. This requires building future actions on stronger business cases and better identified benefits. This development further highlights the need for robust & commonly agreed measurement and evaluation methods.

Ensuring priority is given to economically viable solutions requires redoubling efforts on unlocking the market by fostering open data and standard interfaces, as well as creating a stronger legal framework for protecting privacy and increasing security.

Mobile devices and applications, urban ITS, and inter-modality are rapidly developing domains which could be exploited and integrated into future plans.

Recommendations

The need for new/upgraded actions

The ITS Action Plan offered valuable support for fostering ITS deployment, but it was not sufficient for ensuring large scale deployment. Despite significant progress in terms of raising awareness and removing obstacles to deployment (especially through better coordination of deployment activities in the ITS community and technical harmonisation), results remain to be seen in terms of actual deployment. In light of this, the stakeholder community considered a common policy framework and strong EU leadership as still appropriate and necessary to make progress and foster deployment.

Better selected priorities are needed in order to avoid dispersion of resources. Therefore, in addition to the necessity of addressing current needs, better defined priorities are also required to ensure results in the medium and long term. In light of the limited resources available to the Commission two non-exclusive approaches are recommended:

- **Strategic:** The Commission is recommended to narrow its focus of action on the longer term and give high priority to actions deemed to be key in fostering ITS deployment.
- **Pragmatic:** As all actions implemented so far have been found to be, at least to some extent, relevant⁷ in fostering deployment of ITS, the work conducted so far should be capitalised on. As such, high priority could be given to well advanced actions already demonstrating results in order to pick up the low-hanging fruits and show results on the short and medium term.

Major bottlenecks to ITS deployment remain and should be addressed as priority in order to realise the full potential of ITS. In this respect:

- Open-data and interoperability of systems and applications should remain high on the agenda, as they represent an essential part of any and all ITS solutions. Technical specifications and standards are one of the policy instruments preferred by the stakeholders.
- Awareness-raising among policy makers should remain high in priority, especially since ITS deployment through public investment depends mainly on the national and regional levels.

Specific recommendations

In line with the terms of reference for this evaluation, specific recommendations were made for each individual action, an exercise that resulted in an extensive list of specific recommendations for each of the actions of the ITS Action Plan.

Following-up on all action-specific recommendations might be burdensome for the European Commission, especially in light of the limited resources available. For this reason, a set of horizontal recommendations are put forward for the European Commission which set the stage for the possible follow-up and improvement of the ITS Action Plan in the short and medium term.

In the short term, work on the ITS Action Plan should continue in line with the current objectives.⁸ It is not necessary to revise it based on its current progress, as the present evaluation does not recommend a substantial re-orientation of the current objectives.

The internal management of the ITS Action Plan, in its current form, requires a definition of a clear work plan for a number of actions. This is especially important for the actions that are delayed, have unclear final outputs, or have an "open ended" interpretation of operational objectives. The revised work plans should be built around realistic targets in terms of timing, taking into account limitations relating to the availability of human resources.

The abovementioned work plans should be published on the European Commission's website in order to provide clarity for stakeholders with respect to the planned output of these actions.

The present ITS Action Plan relies heavily on stakeholders' engagement and participation, which was sometimes a challenge due to the great diversity of stakeholders. To support the implementation and effectiveness of a number of actions, the creation and moderation by the European Commission of a stakeholder platform(s) is recommended. While a stakeholder platform is certainly relevant for a number of actions, the diversity of the stakeholders and topics/themes that need to be on the agenda makes it difficult to employ a one-size-fits-all solution. The proposed platform(s) could build on the existing iMobility forum. The work conducted under such a platform could also benefit from the existence and work of the ITS Advisory Group. Such a stakeholder platform is particularly relevant for Action Areas 1 and 4.

⁷ See section on Relevance for more details.

⁸ i.e. The "pragmatic approach" presented above

Interest in urban ITS and inter-modality is growing. These issues are being addressed at national levels, but more consideration for the EU level is needed in order to ensure interoperability and continuity of services.

It is important to ensure that standards resulting from the standardisation efforts mandated under the ITS Action plan provide a sufficiently flexible environment and are technologically neutral. In order to ensure that they are appropriate for the needs of the industry and the latest technological development, stakeholders should actively participate in the standardisation process.

In addition to the above, the implementation, use and appropriateness of specifications should be monitored and reported on regularly. Such an exercise can be conducted together with the reporting envisioned under article 17 of the ITS Directive.

In the medium and long term, it is recommended that the Commission maintains a role in supporting ITS development once the present ITS Action Plan will be finalised. The Commission's role could be presented as part of a deployment strategy for ITS in the EU. To the extent possible, an integrated approach should be taken covering all ITS-related activities in the European Commission. Support for coordination, decision making, and a consistent funding strategy should be among the main pillars of such a deployment strategy. The Connecting Europe Facility (CEF), Horizon 2020 and Regional funds are potential tools which can support the Commission's integrated approach.

1. INTRODUCTION

1.1 Objectives of the evaluation

As set out by the Specifications of the study, the mid-term evaluation of the implementation of the ITS Action Plan has the following purposes:

- help underline the preliminary effects of the ITS Action Plan;
- highlight the key success factors;
- point out the remaining barriers and issues;
- help identify possible new areas of actions or renewed priorities.

In order to meet these objectives, the mid-term evaluation examines and assesses a large range of evaluation criteria, i.e. implementation (progress achieved), relevance, effectiveness, efficiency and sustainability.

While addressing all evaluation criteria and evaluation questions as set in the tender specifications, the evaluation should focus on the need of the European Commission to:

- report on the progress in the implementation of the Action Plan so far; and
- review and, if necessary, extend the priority areas as well as the scope of the actions in order to ensure that the Action Plan continues to address obstacles to the deployment of ITS in Europe in the most appropriate way.

For this purpose, the evaluation was steered towards the formulation of useful recommendations for improvement and future measures. In particular, based on the evaluation results (including stakeholders' consultation), the evaluation provides recommendations on:

- possible follow-up on the respective actions;
- possible review of the level of priorities of actions and/or specific activities to be conducted in the context of the Action Plan.

1.2 Evaluation questions and criteria

The table below offers an overview of all evaluation questions to be answered as part of this evaluation. A full list of questions and sub-questions is available in the evaluation matrix in Appendix 1.

Table 1 Overview of evaluation question and criteria

Implementation
EQ1: What is the actual progress status of the implementation of the ITS Action plan?
EQ2: To what extent is the ITS Action Plan known and its progress followed/reported among the ITS stakeholder community?
EQ3: What are the main success/positive elements with respect to the implementation of the ITS Action Plan?
EQ4: What have been/are the main difficulties/issues in implementing the ITS Action Plan?
EQ5: How can/should the implementation of the various actions be improved?
Effectiveness and sustainability
EQ6: To what extent has the adoption and implementation of the ITS Action Plan raised awareness on the barriers to the deployment of ITS in Europe?
EQ7: To what extent have the actions undertaken so far contributed to achieve the objectives of the ITS Action Plan?
EQ8: To what extent should/could new or upgraded actions be envisaged to complement the work achieved so far?
Efficiency
EQ9: To what extent have the actions undertaken so far been efficient and their (expected) effects been achieved with reasonable resources?
Relevance
EQ10: To what extent have the actions undertaken so far been appropriate to needs in view of fostering the deployment of ITS in Europe??
EQ11: To what extent have the needs and priorities evolved since the adoption of the ITS Action Plan in 2008?
EQ12: To what extent should/could new or upgraded actions be envisaged to better address needs?
EQ13: What could be the possible threats/opportunities for the implementation of the ITS Action Plan in the future?

1.3 Content of the report

This report is the final report of the Mid-Term Evaluation of the ITS Action Plan.

Section 7, Intervention logic of the ITS Action Plan, presents the overall background, policy context, intervention logic, overall management of the ITS Action Plan as well as its relationship and connection with the ITS Directive. By doing so, it sets the logical framework used for the purpose of this evaluation.

Section 3, Methodology (Progress Status), outlines the data collection and analytical strategy designed for the purposes of answering the evaluation questions. This section contains information on the evaluation design, information on the data collection tools and sources, the internal management of the work, as well as limitations of the evaluation.

Sections 4 to 8 present findings and provide answers for each of the evaluation questions. Sections 4 to 7 focus on addressing the evaluation criterion (Relevance, Implementation, Effectiveness and Efficiency). Section 8 presents the final conclusions and recommendations.

The Appendices contain a summary of evidence collected at the level of each Action (so-called "Action Sheets"). The survey results are also available in the Appendices.

2. INTERVENTION LOGIC OF THE ITS ACTION PLAN

2.1 Background

Title IV (Articles 90 to 100) of the Treaty on the Functioning of the European Union (TFEU) sets out the principles of a common EU transport policy. Since 1958 and the entry into force of the Rome Treaty, the common transport policy has focused on eliminating borders between Member States and contributing to the free movement of individuals and goods in order to be part of the efforts to create a fully functioning internal market.

A well-functioning transport infrastructure is vital for continuous efforts to enhance the competitiveness of the European Union⁹. The internal market binds the economies of the Member States together, and the European transport infrastructure needs to facilitate the movement of people and goods in order to fulfil the potential of the European economy. A competitive Europe requires a fully-performing transport system that can cope with growing mobility needs.

While the internal market has always been a focal point of the European Union, sustainable development has become a top priority as well. Following the conclusions of the Gothenburg European Council, the 2001 White Paper¹⁰ sets a strong base for a sustainable European transport system. This culminates in the *Greening Transport Package* initiative of 2008¹¹. The European transport policy aims to reconcile the growing mobility needs of citizens with the requirements for sustainable development. The issue of user safety and protection also becomes crucial for the transport sector.

The Europe 2020 strategy for smart, sustainable and inclusive growth fully endorses these developments.¹² The "Resource efficient Europe" flagship initiative calls for a Commission proposal to modernise and decarbonise the transport sector. It also encourages the Member States to develop smart, upgraded and fully interconnected transport and energy infrastructures, as well as to make full use of ICT, to ensure a coordinated implementation of infrastructure projects that critically contribute to the effectiveness of the overall EU transport system. The initiative also encourages a focus on the urban dimension of transport, as this is where much of the congestion and emissions are generated. To support this, "Innovative Union" includes transport as a strategic research area.

⁹ Renewed Lisbon Strategy for Growth and Jobs (2005); Europe 2020 (2010)

¹⁰ White paper – 'European transport policy for 2010: time to decide' [COM(2001) 370]

¹¹ Communication from the Commission to the European Parliament and the Council - Greening Transport [COM(2008)433]

¹² Communication from the Commission - EUROPE 2020: A strategy for smart, sustainable and inclusive growth, COM(2010) 2020 final

The 2011 roadmap to a Single European Transport Area brings further the objectives to build a competitive transport system that will increase and improve mobility, while reducing Europe's dependence on oil and cutting carbon emissions.¹³

The potential role of ITS

The mid-term review of the European Commission's 2001 White Paper on Transport stated that innovation is a key contributor for ensuring a sustainable, efficient and competitive mobility. The mid-term review outlined the trends in the European transport sector from 2001-2006 and identified the main challenges for the years to come. It outlined actions to be taken, including the Commission's plan to launch a "major programme to bring intelligent road transport systems to market and to prepare infrastructure for Co-Operative Systems".

'Intelligent Transport Systems' mean "applying Information and Communication Technologies (ICT) to transport. These applications are being developed for different transport modes and for interaction between them (including interchange hubs)."¹⁴ ITS can play a significant role in reducing negative effects of transport and thereby is seen as a major contributor to fulfil the European Union's aims of a sustainable and well-functioning transport sector.

The incorporation of information and communication technologies in transport is both diverse and versatile. The figure below illustrates some of the diverse application of ITS in transport.

Figure 1: Intelligent Transport Systems in action¹⁵



Source: European Commission, "Intelligent Transport Systems in action" (2011)

There are many prospects in the deployment of ITS for both the European industries and private persons in all transport modes: the use of satellite communication to inform road users of congestion on the European roads; intermodal communication between trains and train stations

¹³ White Paper - Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system [COM/2011/0144 final]

¹⁴ Action Plan for the Deployment of Intelligent Transport Systems in Europe [COM(2008)886]. The Commission in directive 2010/40/EU expands the definition of ITS to: "Intelligent Transport Systems' or 'ITS' means systems in which information and communication technologies are applied in the field of road transport, including infrastructure, vehicles and users, and in traffic management and mobility management, as well as for interfaces with other modes of transport"¹⁴

¹⁵ Source: "Intelligent Transport Systems in action", Directorate-General for Mobility and Transport, 2011

and passengers to inform about delays and changes in schedules; and communication between airplanes and airport control towers across Europe to minimise accidents.

Transport sectors have different preconditions of implementing ITS measures, but benefits are only fully harvested if the efforts are streamlined across Europe, or beyond. Uncoordinated efforts may result in national or regional solutions that are not interoperable with each other (so-called "silo solutions"), resulting in a patchwork of ITS applications and services that prevents efficient and optimal use for the transporters and travellers who move across borders. Therefore, a pan-European approach is needed to secure geographical continuity, interoperability of services and systems, and standardisation.¹⁶

The transport sector has become highly internationalised and effective ITS applications are already being developed and used successfully for a number of transport modes, e.g. SESAR in air transport, RIS in inland waterways transport, ERTMS in railroad transport, TAF-TSI for freight transport, and VTMS in shipping. On the contrary, the road transport struggles to implement ITS. As stated in the impact assessment of the ITS Action Plan: *"The uptake of ITS road transport has been rather slow and fragmented."*¹⁷

The impact assessment identifies several reasons for these slow developments, and spells out three conditions that drive the problem and call for a common European approach:¹⁸

- **A lack of interoperability of applications, systems and services**, including industries and private players that develop "all in" products based on limited sharing of information and technology; Member States that develop and deploy individual and local ITS solutions; and market failure due to de facto monopolies.
- **A lack of concentration and effective cooperation among stakeholders**, including a lack of strong platform for concertation and cooperation; no clear vision on how to take the best advantage of ITS tools; and limited awareness of the potential benefits of ITS.
- **Unsolved privacy and liability issues**, i.e. a lack of clear rules and legislation on privacy data, and unclear distribution of responsibilities and absence of agreement on service ownership, which feed suppliers' and customers' reluctance to develop and use ITS.

Yet, without a proper use of ITS to support achievement of the policy objectives of a well-functioning and sustainable road transport, it will be difficult to successfully fight the enormous and increasing challenges to road transport, i.e. congestion; emissions, pollution and energy efficiency; and accidents and security of transport operations.¹⁹

Traditional measures of expansion of the road transport infrastructure are not feasible for tackling these challenges in a reasonable timescale. Road transport infrastructure takes many years to plan, build and put to use. When the infrastructure is in place, it is very hard to change or modify. In addition, increased road traffic would have undesirable effects. Hence, there is a need to explore and implement new and innovative solution, among which ITS is an option to consider.

As indicated above, ITS clearly demonstrate a potential to support the achievement of the transport policy objectives of a sustainable, efficient and competitive mobility in Europe. But it has also been seen that the deployment of ITS in road transport requires a consistent, harmonised and synchronised approach across Europe in order to support the achievement of transport policy objectives. This calls for a common European strategy.

On this background, the Commission has launched the ITS Action Plan.

¹⁶ Action Plan for the Deployment of Intelligent Transport Systems in Europe [COM(2008)886].

¹⁷ Impact Assessment [SEC(2008)3083]

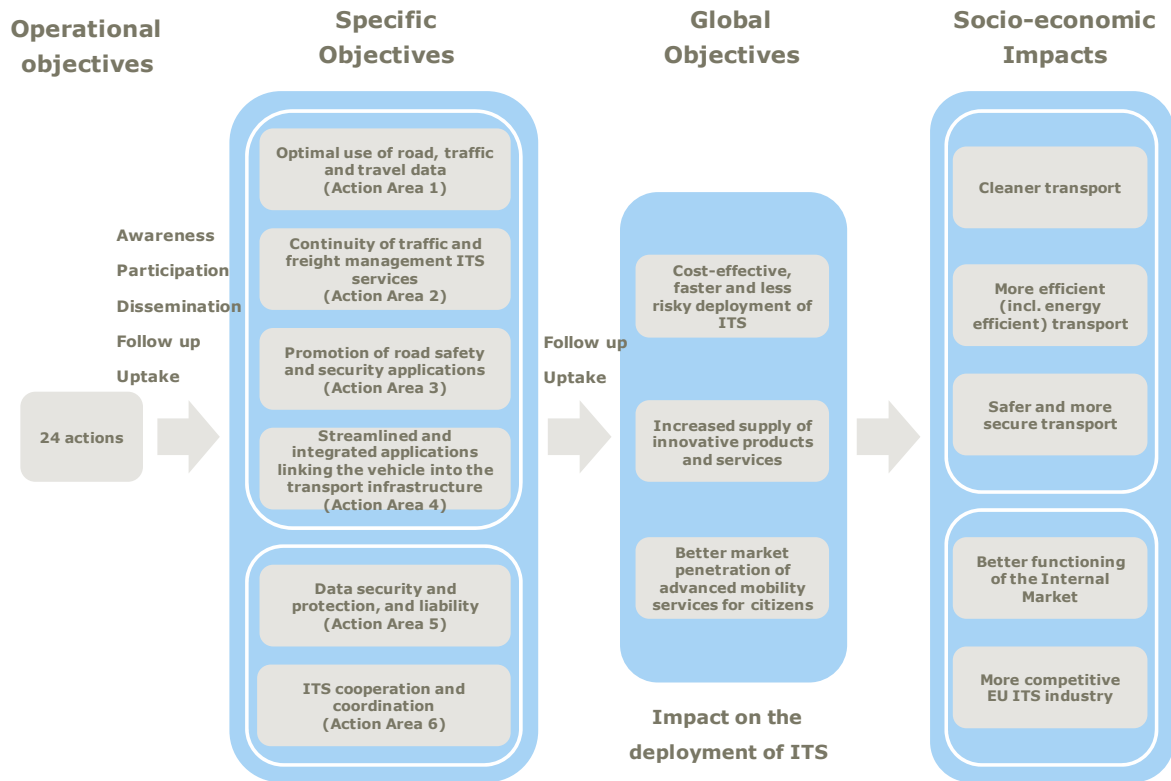
¹⁸ Impact Assessment [SEC(2008)3083]

¹⁹ Impact Assessment [SEC(2008)3083]

2.1.1 Intervention logic and objectives

Figure 1, below, presents the overall theory of change of the Action Plan. The following box depicts the assumption underlying the specific and overall levels of the simplified theory of change.

Figure 1, Simplified intervention logic



The graphical representation of the theory of change should read as follows:

If actions are implemented as planned and their outcomes taken or followed up, it is expected that Europe will see concrete results to some of the short-to-medium term problems it faces with regard to the implementation of ITS in Europe. In turn, it should result in contributing to the long term objectives in terms of transport efficiency, sustainability, safety, and security, whilst contributing to the European Union Internal Market and competitiveness of the European industry.

As seen, the intervention logic makes assumptions, intended mechanisms, and expected outcomes of the ITS Action Plan explicit. Table 2, below, identifies the objectives of the programme and reconstructs the theory of change of the intervention and its expected impacts, with a view toward linking the means (activities) and the ends (outcomes) of the given intervention.

Table 2 Components of the intervention logic

Level in Action Plan	Objective	Source of definition of objective	Outcomes
Activity	-		Deliverable
Action	Operational objective	Action's definition in Action Plan	Output
Action Area	Specific objective	Action Area title in Action Plan	Results
Deployment of ITS	Global objective	As specified in section 4.4 in Action Plan ²⁰ and in the Impact Assessment ²¹	Impact on the deployment of ITS
Socio-economic impacts	Socio-economic objectives	As specified in the in the Impact Assessment	Socio economic impact

2.1.2 Socio-economic impacts

The Action Plan for the deployment of Intelligent Transport Systems in Europe (so-called ITS Action Plan) was adopted by the Commission on 16 December 2008.²² It sets out an approach for the Commission in its effort for a faster and more coherent implementation of ITS in road transport in Europe.

As presented in section 1 of the ITS Action Plan, the ITS Action Plan pursues three main policy objectives for transport and travel that rise from the challenges indicated above: **transport and travel need to be cleaner, more efficient, safer and more secure.**²³

Meanwhile, the ITS Action should contribute to the functioning of the Internal Market and the competitiveness of the European industry involved or interested by the deployment of ITS.

The ITS Action Plan is the Commission's concrete answer to reach these overall goals. Its short-to-medium term perspective is to foster the deployment of ITS in Europe.

2.1.3 Global objectives

The global objectives of the ITS Action Plan have been extracted from section 4.4 of the Commission Communication²⁴ in which the plan is presented. They refer to the expected benefits of EU intervention as opposed to a limited and fragmented implementation observed by the Action Plan's Impact Assessment. Based on this source, in the understanding of the Contractor, in its integrity the ITS Action Plan is aimed to provide:

- cost effective, faster and less risky deployment of ITS;
- increased supply of innovative systems and services; and
- better market penetration of advanced mobility services for the citizens.

Bullets No. 1 and 4 presented in section 4.4 of the Action Plan have not been replicated as overall objectives because they overlap with Action Areas 6 and 2, respectively. In other words, it is understood that bullets No. 1 and 4 are part of the specific objectives (cf. Table 3 below).

²⁰ Except bullet No 1 and 4 which overlap with Action Area 6 and Action 2.1 respectively.

²¹ Impact Assessment SEC(2008) 3083

²² Communication COM(2008)886

²³ As presented in point 4.4 of the ITS Action Plan

²⁴ COM(2008) 886 final

2.1.4 Specific objectives

In the framework of this evaluation, the specific objectives of the ITS Action Plan are the objectives pursued by each of the Action Areas presented in the Action Plan Communication.

Table 3, below, presents the 6 Action Areas of the ITS Action Plan and provides a short description of each area.

Table 3, Specific objectives of the ITS Action Plan

Area	Specific Objective	Description ²⁵
Action Area 1	Optimal use of road, traffic and travel data	<p>Many state-of-the-art ITS applications rely on accurate knowledge of both the characteristics of the road network and the applicable traffic regulations (e.g. one-way streets and speed limits). Whilst in the past the bulk of this knowledge was provided by authorities, there is a trend towards the utilisation of commercial sources. Where road safety is at stake it is essential that this information is validated and made available to all players on a fair and equitable basis, in view of ensuring a safe and orderly management of traffic. This applies, in particular, to digital mapping, including its inherent processes for data collection, validation and timely updating.</p> <p>Similar considerations apply to the provision of (real-time) traffic and travel information services. Specific issues include the notion of "universal traffic messages", i.e. the type of messages provided free of charge to all road users as a public information service, the consistency of the information between the various sources, and the need to comply with prescriptions imposed by network management operations.</p>
Action Area 2	Continuity of traffic and freight management	<p>The need to accommodate rising traffic volumes, notably on the major European transport corridors and in conurbations, while promoting environmental sustainability and energy efficiency, calls for innovative transport and traffic management solutions. In this respect, seamless and dynamic traffic and transport management are beneficial for long-distance and urban freight transport and simultaneously improve co-modality.</p>
Action Area 3	Road safety and security	<p>ITS-based road safety and security applications have proven their effectiveness, but the overall benefit for society depends on the scale of their deployment. Issues that require additional attention include designing a safe Human Machine Interface (HMI) (using the work done on the "European Statement of Principles"), integrating nomadic devices and ensuring the safety of vulnerable road users (such as the elderly). Efforts to promote best practices in these areas are therefore crucial to address these issues.</p>
Action Area 4	Integration of the vehicle into the transport infrastructure	<p>The use of ITS components or systems is stipulated in several existing or planned legal acts and voluntary agreements applicable to commercial or private vehicles. Examples include the provisions on the transport of dangerous goods and live animals, digital tachograph, electronic toll collection and eCall. So far most of these acts and agreements have evolved independently of each other, so there has been little synergy even when needs are the same.</p> <p>A streamlining and integration of these applications within a coherent, open-system architecture could yield better efficiency and usability, reduced costs and enhanced extensibility, enabling a "plug and play" integration of future new or upgraded applications such as those in nomadic devices and those utilising GNSS services for advanced positioning and timing. This open system architecture would be embodied in an open in-vehicle platform, guaranteeing interoperability/interconnection with infrastructure systems and facilities. With this modular approach, additional functionalities could be integrated later for in-vehicle safety and safe HMI, personal mobility, logistics support and access to multimodal information and possibly electronic vehicle identification.</p>

²⁵ As presented in the description of each Action Area in the ITS Action Plan, COM(2008) 886 final

Area	Specific Objective	Description ²⁵
Action Area 5	Data security and protection, and liability issues	The handling of data (notably personal and financial data) in ITS applications raises a number of issues, as citizens' data protection rights are at stake. At the same time, data integrity, confidentiality and availability must be ensured for all parties involved, especially citizens. Finally, the use of ITS applications creates additional requirements in terms of liability. These issues can be a major barrier to wide market penetration
Action Area 6	European ITS cooperation and coordination	Coordinated deployment of ITS in the EU calls for intensive and effective cooperation between all parties involved at the European level. This will ideally lead to rapprochement on deployment requirements, better synchronisation of deployment activities and avoidance of national and proprietary silo solutions that constitute barriers to European integration. Dissemination of the best available knowledge regarding the costs and benefits of ITS projects from a full life-cycle perspective and feedback on relevant experience are needed to support informed investment decisions by public authorities across Europe. To make EU-wide deployment a reality, it is crucial for there to be agreements on common assessment methods and uniform tools for decision support . Such coordinated deployment of ITS throughout Europe also requires greater involvement of cities and regional authorities, notably at urban and inter-urban levels. Guidance and technical support should be provided to facilitate and underpin consensus-building and decision-making processes. Finally, the implementation of the measures in this Action Plan will call for an adequate governance structure. Member States should aim to reach agreement on a common ITS agenda and on methods to proceed from plans to coordinated implementation, for example by way of concerted investments or harmonisation initiatives.

2.1.5 Operational objectives

In the framework of this evaluation, the operational objectives of the ITS Action Plan are the objectives pursued by the Actions of the Action Plan.

The operational level of the Action Plan is comprised of the 24 actions detailed and described in the ITS Action Plan; these represent the main analytical unit of this evaluation study.

In order to fulfil the operational objective of each action and to consider the action completed, a number of outputs have been planned and are expected to be the final product of each action. Outputs can take the following forms:

- consultation report;
- recommendations;
- deployment guidelines;
- study report/working paper;
- regulation;
- specifications;
- technical standards.

2.1.6 Implementation instruments (activities)

The implementation of each action entails the performance of a range of activities which contribute to the operational objectives of the respective actions.

Activities can take the form of various instruments being used for the implementation of the Action Plan. These include:

- studies;
- research projects (i.e. projects funded under the Research Framework Programme);
- stakeholder consultations;
- expert groups/workshops;
- events (e.g. conferences);
- preparation of legal instruments (incl. impact assessment).

The evaluation report maps all activities performed under each action in order to assess the degree of achievement of each action. This overview supports the assessment of the implementation of each action, together with the more qualitative assessment of the effectiveness of each action.

2.2 Management of the Action Plan

The implementation of the ITS Action Plan is a concerted effort of several Commission services (DG MOVE, DG CONNECT, DG RTD, DG ENTR and DG CLIMA) under the general coordination of DG MOVE.

The Action Plan's progress is recorded in a Commission monitoring tool that monitors the progress of the individual actions. For each action, the Excel tool contains information, *inter alia*, on responsibilities and division of tasks, key milestones and next steps, stakeholders involved and links to other related activities or organisations at the European and international level.

2.2.1 Overall Action Plan coordination

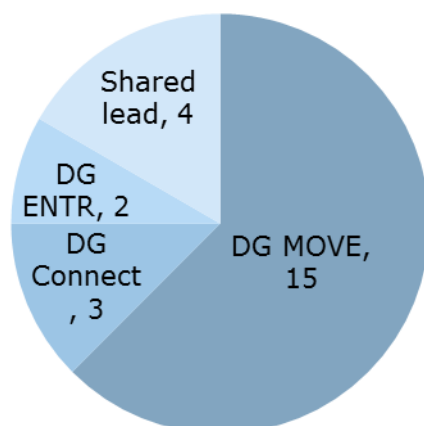
The overall ITS Action Plan Coordination is ensured by DG Move's Unit C3: Intelligent Transport Systems.

The Commission's ITS Steering Group is composed of the Directors responsible for ITS in the following DGs: MOVE, CONNECT, ENTR, RTD and CLIMA. The Group is tasked to coordinate all ITS-related activities of the Commission, including the implementation of the ITS Action Plan and of the ITS Directive. The Group is expected to meet four to six times per year, but has met in effect twice a year so far. It is assisted in its work by the ITS Working Level Group, meeting regularly at the Head of Unit level to address specific points or issues of operational nature.

2.2.2 Division of responsibilities in the European Commission

Within the work of the Commission is the designation of responsible DG's and policy officers in charge of implementing each action (so-called action leaders). Action leaders are Commission project officers charged with implementing operational aspects of individual actions, and they are responsible for the day-to-day work and management of the activities undertaken under the actions they have been assigned.

According to the internal monitoring tool, DG MOVE is the lead DG for 15 Actions, while the other DGs lead/share lead a limited number of actions each.

Figure 2, Distribution of actions' lead between the different DGs involved in the ITS Action Plan

A full table detailing the lead DG for each action is inserted as an Appendix to this report.

2.3 Stakeholders and their involvement

One of the striking features of the ITS Action Plan is that it involves a large community of stakeholders. The implementation of the ITS Action Plan by the different DGs of the European Commission also involves external stakeholder groups,²⁶ such as:

- associations of stakeholders from different stakeholder groups (e.g. ERTICO, Network of National ITS Associations);
- representatives of authorities (e.g. CEDR, UITP, EMTA, ASECAP, Eurocities, Polis);
- operators (e.g. ERIC, TISA, GSMA);
- industry organisations (e.g. ACEA and ACEM);
- development suppliers (e.g. Navteq, Rejseplanen);
- associations of users (e.g. IRU, EPF) ;
- research entities (e.g. ECTRI);
- standardisation organisations (e.g. ETSI, CEN);
- etc.

The European Commission has set up, under the umbrella of the ITS Action Plan, the European Urban ITS Platform as a stakeholder group comprised of individual experts, nominated in their personal capacity. Associations were active in the selection process of members by nominating a number of candidates, who were then reviewed by the Commission and chosen according to their experience (pursuant to Action 6.4.).

The European Commission has also set up, in the framework of Directive 2010/40/EU, two stakeholder groups directly involved in the implementation of the ITS Directive, namely the European ITS Committee (EIC), composed of Member State representatives, and the European ITS Advisory Group, composed of 25 members from relevant ITS service providers, associations of users, transport and facilities operators, the manufacturing industry, social partners, professional associations, local authorities and other relevant players.

In addition to these direct bonds with Commission services, stakeholders also include representatives from Member States involved in various initiatives, such as EasyWay, European eCall Implementation Platform EEIP and iMobility Forum.

²⁶ i.e. road and mobility operators, industries, environment, research entities and developers/suppliers

2.4 The ITS Action plan and the ITS Directive

The ITS Directive 2010/40/EU²⁷ was proposed by the Commission in 2008 and then adopted by the Council and the European Parliament on 7 July 2010.²⁸ The Directive establishes a framework in support of the coordinated and coherent deployment and use of ITS within the EU, in particular across the borders between the Member States. For that purpose, it sets the responsibilities of the Commission and the Member States, and defines priority actions that are aligned with the ITS Action Plan. The path forward was further laid down through the Working Programme,²⁹ presented 15 February 2011.

The ITS Directive is the first EU-wide legislative basis for the coordinated deployment of ITS for roads. It is aimed to complement the ITS Action Plan by supporting the foreseen measures with a set of enforceable legal provisions.

Under the ITS Directive, the Commission is to adopt binding specifications to address the compatibility, interoperability and continuity of ITS solutions across the EU; these must be respected whenever ITS are deployed in Member States. According to the priorities set by the Directive, specifications on road safety related minimum universal traffic information, an interoperable EU-wide eCall, and intelligent truck parking are due in 2012; specifications regarding the provision of EU-wide real-time traffic information services are due in 2013, and EU-wide multimodal travel information services are due at the end of 2014.

While there is a considerable amount of synergy between the framework of the Action Plan and the provisions of the Directive with respect to the priority areas and priority actions, it is important to map the relationship, connection, and overall potential priority shift in order to identify the actions not covered by the directive, as well as to assess whether or not the actions not mentioned in the Directive have slowed down.

Table 4, below, provides an overview of the priority areas and actions of the Directive and its relationship with the ITS Action Plan.

Table 4, Action Areas in the ITS Action Plan and corresponding Priority Areas in the ITS Directive

Action Areas in the Action Plan	Priority areas in the Directive ³⁰
1. Optimal use of road, traffic and travel data.	I. Optimal use of road, traffic and travel.
2. Continuity of traffic and freight management ITS services on European transport corridors and in conurbations.	II. Continuity of traffic and freight management ITS services.
3. Road safety and security.	III. ITS road safety and security applications.
4. Integration of the vehicle into the transport infrastructure.	IV. Linking the vehicle in the transport area with the transport infrastructure.
5. Data security and protection and liability issues.	N/A.
6. European ITS cooperation and coordination.	N/A (the ITS Directive by itself).

Table 5, below, presents the actions of the Action Plan and whether or not they are referenced in the text of the Directive (either spelled out as a priority action or included in the legal framework in the annex of the Directive).

²⁷ Directive 2010/40/EU on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other transport modes, O.J. L 207/1 of 6.8.2010

²⁸ Although Action 6.1 of the Action Plan deals with 'defining the legal framework', the Directive has emerged in parallel and quite independently from the ITS Action Plan.

²⁹ Commission Decision of February 15 2011 concerning the adoption of the Working Programme on the implementation of Directive 2010/40/EU, C(2011) 289 final

³⁰ Article 2, Directive 2010/40/EU

Table 5, Actions in the ITS Action Plan and corresponding source in the ITS Directive

Nr.	Action in the Action Plan ³¹	Under the Directive ³²	Source in the Directive
1.1	Real Time traffic & travel information	Yes – Priority Action	Priority Action (a) ³³ – Article 2 Priority Action (b) ³⁴ – Article 2
1.2	Collection & provision of road data	Yes	Priority Area I - Point 3.1 – specifications for priority actions (a) and (b) - Annex I
1.3	Data for digital maps	Yes	Priority Area I - Point 3.2 – specifications for priority actions (a) and (b) - Annex I
1.4	Free minimum information	Yes - Priority Action	Priority Action (c) ³⁵ – Article 2
1.5	Promotion of multimodal journey planners	Yes - Priority Action	Priority Action (a) ³⁶ – Article 2
2.1	Continuity of ITS services	Yes	Priority Area II - Points 1.2 and 1.3 – Annex I
2.2	eFreight	Yes	Priority Area II - Point 2.2 – Annex I
2.3	ITS Architecture	Yes	Priority Area II - Points 1.1 and 1.5 – Annex I
2.4	Electronic road tolling	No	-
3.1	Promotion of safety related ITS	No	-
3.2	eCall	Yes - Priority Action	Priority Action (d) ³⁷ – Article 2
3.3	Human-machine interface (HMI)	Yes	Priority Area III – Point 4.1 – Annex I
3.4	Vulnerable road users	Yes	Priority Area III – Point 4.2 – Annex I
3.5	Secured truck parking	Yes - Priority Action	Priority Action (e) ³⁸ – Article 2 Priority Action (f) ³⁹ – Article 2
4.1	Open in-vehicle platform	Yes	Priority Area IV – Point 1.1 – Annex I
4.2	Cooperative vehicle systems	Yes	Priority Area IV – Point 1.2 – Annex I
4.3	I2I, V2I, V2V communication	Yes	Priority Area IV – Point 1.2 – Annex I
4.4	Standardisation mandate	Yes	Article 8
5.1	Security, data protection	Yes	Article 10
5.2	Liability issues	Yes	Article 11
6.1	Legal framework for coordination	N/A	ITS Directive
6.2	Decision support toolkit	No	
6.3	Funding guidelines	No	
6.4	Urban ITS platform	No	The urban ITS platform does not have a corresponding element in the Directive; however, the directive covers the Urban ITS architecture in Priority Action II - Point 1.5.

³¹ According to the ITS Action Plan – COM(2008) 886 final

³² According to Directive 2010/40/EU

³³ the provision of EU-wide multimodal travel information services

³⁴ the provision of EU-wide real-time traffic information services

³⁵ data and procedures for the provision, where possible, of road safety related minimum universal traffic information free of charge to users

³⁶ the provision of EU-wide multimodal travel information services

³⁷ the harmonised provision for an interoperable EU-wide eCall

³⁸ the provision of information services for safe and secure parking places for trucks and commercial vehicles

³⁹ the provision of reservation services for safe and secure parking places for trucks and commercial vehicles

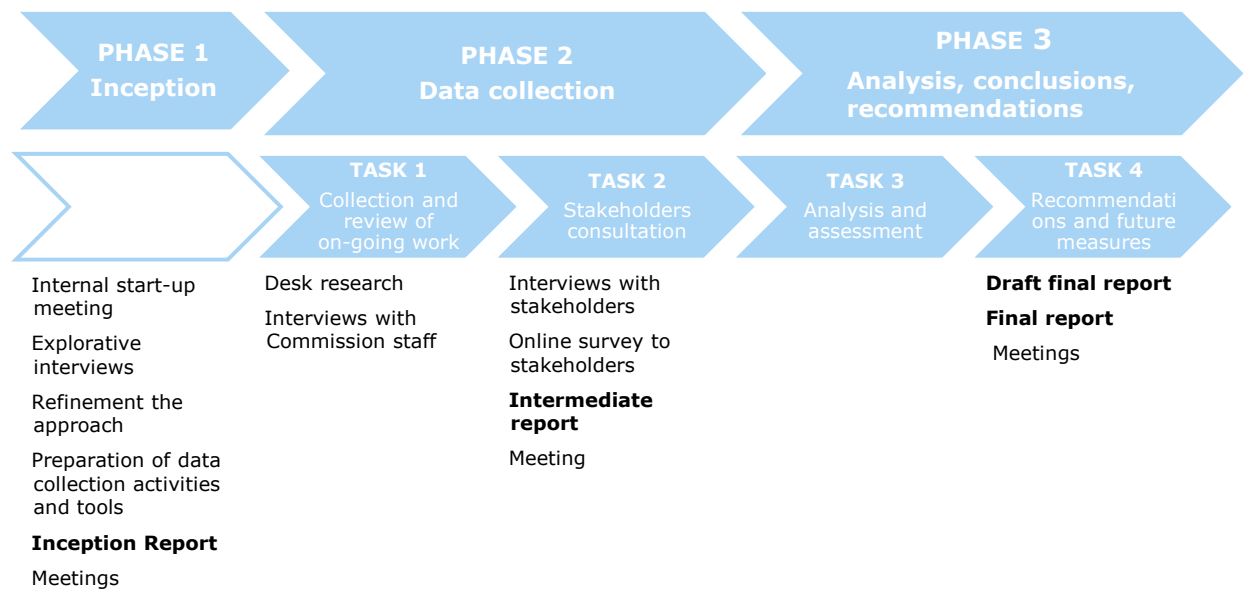
The ITS Directive is a key enabler of the ITS Action Plan; a considerable number of activities undertaken in the context of individual actions of the Action Plan are being followed up through work conducted in the context of the Directive. As such, this new context implies important developments with respect to the level of attainment of the objectives of these actions, which have an influence on the relevance of the operational objectives defined in the Action Plan.

3. METHODOLOGY

This chapter describes the methodological approach used in this evaluation. It offers a full overview of the data collection and analytical strategy implemented to provide answers to each of the evaluation questions.

Figure 3, below, presents an overview of the work plan and tasks for the evaluation.

Figure 3 Overview of work plan and tasks



3.1 Evaluation design and evaluation matrix

To ensure that all the evaluation questions could be answered by means of the available and collected data, and in order to structure the analysis and judgement phase, an evaluation matrix was established during the inception phase. This matrix is available in Appendix 1.

The evaluation matrix provides an overview of the links between the evaluation criteria, the evaluation questions pertaining to each criterion, the sub-questions proposed by the evaluator to specify and help answer the evaluation questions, the established indicators, secondary and primary data sources to be used, and the judgment criteria to be applied for the final assessment.

The table below is an extract of the evaluation matrix available in Appendix 1.

Table 6 Extract of the evaluation matrix

Evaluation questions	Sub-questions	Indicators/ descriptors	Judgement criteria
EQ2: To what extent is the ITS Action Plan known and its progress followed/reported among the ITS stakeholder community?	EQ2.1 To what extent have stakeholders (including Commission staff other than the lead) participated in the implementation of the Action Plan?	- Evidence of participation of relevant stakeholders in the implementation of actions (and change with time)	For each action: - Evidence of the following can be collected: - stakeholder's participated - outputs were disseminated to the relevant stakeholders (for completed actions only) - Stakeholders interviewed: - demonstrate a good level of awareness of the progress and outputs - consider that the level of participation and/or information of the stakeholders' community is sufficient
	EQ2.2 To what extent have the progress and outcome of the Action Plan been disseminated to stakeholders?	- Evidence of dissemination activities (including publication on website and websites statistics) - Stated level of participation, dissemination and awareness among stakeholders of the progress and outputs	
	EQ2.3 To what extent are stakeholders aware of the progress and outcome or the Action Plan?		

Sub-questions were developed to specify the elements analysed to answer each evaluation question. Identifying these elements was a deductive process necessary to ensure that abstract and ambiguous concepts could be analysed. By doing this, the evaluator made explicit which elements of the evaluation question were in focus in the data collection and analysis.

Indicators (or descriptors) are key elements of the evaluation design and analytical strategy. Indicators describe in detail the information required to answer the question. They are measured using the data collected, and compared against judgement criteria. The quality of the answer relies on the availability and measurability of the indicators for the programme under observation.

Judgement criteria are norms defined by the evaluator with the support of the European Commission. They take the form of targets, benchmarks or qualitative statements for indicator measurements to be assessed against.

The evaluation matrix and all of its components were used in the evaluation process to guide the data collection and analysis. Moreover, it was used to structure this report and the analysis presented within it. Evaluation questions and, to the extent possible, the indicators used to answer them are explicitly made in the report through references, as well as by identifying the data sources and collection tools used.

3.2 Data collection and analytical strategy

This section describes the data collection and analytical strategy implemented for the evaluation.

Although the evaluation aims to provide answers to each of the evaluation questions at the Action Plan level, actions are also very important analytical units. This called for a strong focus on the actions for both the data collection and analysis. This is described in the following.

The cut-off date for data collection for the evaluation was 31 November 2012; developments that occurred after this date are not reflected in the findings of this report.

3.2.1 Data collection strategy

In order to collect data on each action, the following was implemented:

- In-depth **desk research** was conducted in order to review evidence on the progress made at the level for each action.
- **Interviews with European Commission officials and stakeholders** focused mainly on the action(s) relevant to the interviewees. Interview guides were structured in two parts: 1) interviews on specific actions; 2) interviews on the Action Plan. During the interviews, priority was given to the first part so detailed information could be collected for each evaluation question at the level for each action.
- The **online survey** aimed to collect general opinions on the ITS Action Plan, but it also included a set of questions focusing on each action. To this purpose, the survey was structured in two parts: 1) overall survey on the Action Plan; 2) specific survey on each action. The second part was optional and limited to a few questions.

In order to collect data at the Action Plan level, the following sources were used:

- The **online survey** was the main tool used for collecting data at the Action Plan level as a whole. Despite lower internal validity of the data collected, for the reasons explained in section 3.4, the survey provided information on an overall level. This complemented well the more detailed evidence collected at the level for each action.
- In a separate part of the interview, **European Commission officials and stakeholders** were asked questions related to the Action Plan as a whole. Despite the limitations presented in section 3.4, the second part of the interviews, focused on the Action Plan overall, provided additional information that supported the analysis at the level for each individual action.
- **Aggregate data at the Action Plan level**, based on the analysis of individual actions, was aggregated in the so-called "Quick assessment Tool".

The sources of data were used to provide answers to evaluation questions at different levels of the action plan. Some sources (e.g. desk research of relevant documents) were used to a higher extent in the analysis conducted at the action level, while other sources were used to provide data for the overall Action Plan (e.g. the online survey).

The following table provides an overview of the data collection strategy and states to what extent each source provided data for individual actions and/or the Action Plan:

Table 7 Overview of the data collection strategy

Sources	Level of data collection	
	Actions	Action Plan
Task 1 – Collection and review of on-going work		
Desk research of relevant documents	Yes, to a high extent	No
Interviews with Commission officials	Yes, to a high extent	Yes, to a limited extent
Task 2 – Stakeholders consultation		
Interviews with stakeholders	Yes, to a high extent	Yes, to a limited extent
Online survey	Yes, to some extent	Yes, to a high extent

3.2.2 Analytical strategy

An initial analysis was conducted for each action. First, the data collected during desk research, interviews and surveys was reported in an “action sheet” and structured along the evaluation questions and sub-questions. Triangulation of sources enabled the evaluator to make an assessment of all indicators for each action by using a “Quick Assessment Grid”.

A second analysis was then conducted for each Action Area. This enabled the findings to be aggregated for the report, and provides the reader with preliminary answers to evaluation questions at the Action Area level.

The final analysis for the Action Plan level was conducted through a triangulation of all available data. An analysis across actions (and Action Sheets) was first conducted on the basis of the “quick assessment grid”. The results of the analysis were then triangulated with the data collected at the Action Plan level through the online survey (mainly) and the second part of the interviews. This made it possible to answer the evaluation questions for the Action Plan as a whole.

“Action sheets” are available in Appendix 5.

To ensure that all findings and conclusions are substantiated, the data analysis was based on the principle of triangulation. This basically means that all “facts” or, in this case, findings presented in the evaluation are supported by evidence from different data sources. The figure below illustrates the principle of triangulation and how the different data sources were used to confirm or reject stated “facts” on actions and the Action Plan.

Figure 4, Overview of the analytical strategy



In the final analysis, findings from the different data sources were compared and contrasted to establish and describe in a clear and understandable way:

- common trends and possible explanations across actions and the overall Action Plan;
- deviations from the common trends and possible explanations;
- extremes and possible explanations;
- illustrative examples for better understanding and more interesting reading.

The analysis and qualitative assessment based on triangulation provided the foundation for the judgement on the performance of the ITS Action Plan, rather than fixed judgement criteria. A higher degree of common trends and validated positive findings established the extent of success of the Action Plan.

3.3 Data sources

The present section provides a more detailed breakdown of the data sources used for the purpose of this evaluation.

3.3.1 Collection and review of on-going work (Task 1 data collection)

As a first step, a systematic review of the activities implemented under the Action Plan was conducted. This task included:

- Desk research: this sub-task consisted of a review and analysis of available documents relevant to completed and on-going work. For the purpose of the desk research, a wide range of available sources were used, including intermediate and final study reports, legislation, decisions, European Commission papers, communications, staff working documents, press releases, workshop minutes, etc.
- Interviews with the European Commission officials: each "action leader" was interviewed to complement and validate the information reported in the pre-filled action sheets prepared on the basis of desk research. In addition, the interviews with European Commission officials collected information relevant for answering the evaluation questions. In total, 13 interviews were conducted with project officers from DG MOVE, DG ENTR and DG CONNECT. The list of interviewees can be found in Appendix 4.

3.3.2 Consultation of stakeholders (Task 2 data collection)

3.3.2.1 Interviews with stakeholders

This sub-task consisted of conducting interviews with key stakeholders. An objective was set to interview two stakeholders for each action, leading to a total of 48 interviews.

Possible interviewees were identified based on the recommendations from the action leaders from the European Commission and the recommendations of qualified ITS practitioners. A database pool comprised of approximately 77 persons was then used to select interviewees, subject to validation by the evaluator in order to reflect the diversity of the stakeholder community.

Each stakeholder was contacted by e-mail/phone and invited for a phone interview. A pre-filled interview guide for each respective action was shared with interviewees in advance and followed during the conversation. After interviews were conducted, all of the gathered feedback was finalised and utilised in the action sheets.

In total, 51 interviews were conducted according to the distribution indicated below. As seen, the users were under-represented in the sample. This limitation, among others, is further discussed in section 3.4.

Table 8 Overview of interviews with stakeholders

Type of stakeholders	Number of interviewees	%
Authorities	19	37%
Industry	18	35%
Operators	12	24%
Users	2	4%
Total	51	100%

3.3.2.2 Online Survey

This sub-task consisted of an online survey to key stakeholders.

The questionnaire survey was developed in close cooperation with the European Commission. It was piloted with 5 stakeholders selected on a voluntary basis from the pool of interviewees.

The survey questionnaire was divided in two parts. In the first part, respondents answered to questions on the Action Plan overall. In the second part, respondents had the possibility to answer to specific questions on selected Actions.

The questionnaire was launched and disseminated by the European Commission on Monday, 8 October and was open until Friday, 09 December 2012 (two weeks after the opening of the 2012 ITS World Congress). The European Commission used its internal stakeholder database to disseminate the questionnaire. Reminders were sent to respondents via email and the European Commission gave information on the (then on-going) survey at the ITS World Congress.

A total of 83 answers were received. Overall, respondents are well spread across the defined parameters: country or residence of the respondent/organisation; organisation or personal views; organisation's activities; ITS areas. This strengthens the external validity of the survey results. However, due to the small size of the sample, no statistical inference is possible.

Overall, a large majority of respondents (59%) answered on behalf of their organisation as a whole, while 41% responded to their personal view. Since organisation views should, in principle, weigh more than personal views, this strengthens further the validity of results.

3.4 Limitations and mitigation

This section presents the inherent limitations of the study, together with the steps that were taken to mitigate their negative impacts.

Lack of representativeness of the sample of interviewees

In order to maximise the quality and amount of data collected on each Action, the external stakeholders were selected for interviews on the basis of their knowledge and understanding of the activities undertaken by the European Commission in the course of implementation. Also, "only" two stakeholders were interviewed for each action, therefore the evidence collected through interviews is potentially biased. In total, 51 stakeholders were interviewed, which overall is still a sizeable sample.

To balance this potential risk, the analysis of individual actions relied heavily on data collected through desk research; this allowed for a comparison of statements against facts. Therefore, triangulation of data already took place in the analysis of actions, on the basis of the desk research, interviews with external stakeholders (two per Action at least), interviews statements from European Commission staff, and survey results at Action level.

Limited representativeness of the sample of survey respondents

The sample of survey respondents is not representative of the ITS community; the survey was distributed through the European Commission's stakeholder database and there was no application of a sampling strategy. Moreover, a total of 83 respondents answered to the survey, which is overall acceptable, but does not enable any statistical inference across the categories of respondents.

In order to mitigate this limitation, survey responses were systematically compared across the group of respondents. In general, very few discrepancies across categories of respondents were identified, which undermines the importance of this limitation. Where answers still varied considerably across the types of respondents, this was explicitly presented in the report. Details on the respondents' profiles and answers are also provided in Appendix 3.

Unclear scope of the actions

The assessment of the degree of completion of some actions and of the degree of achievement of their respective operational objectives proved to be unusually difficult. Despite the fact that "action fiches" were prepared by the Commission to further operationalize the objectives of each action, these were not systematically available to the evaluator for each action. They also did not necessarily provide a suitable work programme that set clear milestones for progress measurement and indicators for success. In a number of actions, the formulation of the Action Plan allows for interpretation and open-ended objectives. This was a source of confusion for the evaluator (as well as for the stakeholders).

In order to mitigate this limitation and ensure a common understanding of planned/expected outputs, the Evaluator prepared an action sheet for each action. These contained information on the specific objectives and the planned output of each specific action as defined by the European Commission, together with a description of the approach and steps undertaken for the realisation of the planned output. These action sheets were validated by the European Commission representatives in order to ensure common understanding and to avoid factual errors. Despite of this, some uncertainties remained.

Continuity between the Action Plan and other activities launched before or run in parallel

The ITS Action Plan is not necessarily a stand-alone policy enacted by the European Commission. It has numerous links with other initiatives that preceded the adoption of the Action Plan or were started in parallel but support a similar goal.

In this context, it was very difficult to dissociate the costs and impacts of the ITS Action Plan from the costs and impacts of other policies or activities. Also, there was a tendency to attribute all kinds of European Commission initiatives and impacts to the Action Plan, yet there was little evidence of centralised steering of those activities. Confusion was also high for stakeholders.

In order to mitigate this limitation, action leaders were asked to validate the evaluator's understanding of each action. Moreover, interviewees were selected on the basis of their knowledge and understanding of individual actions. In-depth understanding of the activities carried out as part these actions, and their wider context, enabled a focus on the right activities to the best extent possible.

In order to ensure a high level of transparency of the basis of evidence used by the Evaluator, the Appendices of this report include:

- **Appendix 3, Survey Results:** it offers a comprehensive report of responses to close-ended questions in the survey. Both parts of the survey (Action Plan overall, and specific questions on selected Actions) are included. An introduction discusses further the composition of the sample of respondents and its impact on the answers/
- **Appendix 5, Action Sheets:** Action sheets include a compilation all data collected at action level. Those sheets were designed as internal documents, and the decision to publish them made late in the study implementation. For this reason, these Action Sheets were not edited and should be regarded as working documents only.

4. IMPLEMENTATION

4.1 Progress status

This section addresses the following evaluation question:

- **EQ1: What is the actual progress status of the implementation of the ITS Action Plan?**

It builds mainly on the results of the desk research, as well as the interviews with the European Commission.

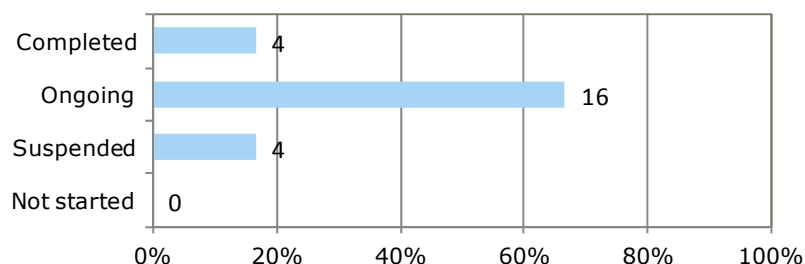
In order to answer this evaluation question, three indicators were examined: the **status**, **completion level** and **timing** of the actions.

4.1.1 Action Plan level

Status

Figure 5, below, indicates the status of the actions according to the European Commission's plans. As seen, all actions had started by the end of 2012. Taking into account the large number and broad scope of the actions, this can be considered a positive achievement.

Figure 5, Status of the actions



The large majority of actions are still on-going (about 60% of the total number of Actions).

At the time of data collection,⁴⁰ four actions (about 20% of the total number of actions) had been completed: Actions, 1.5, 3.2⁴¹, 6.1⁴², and 6.4. This means that all planned activities have been

⁴⁰ In order to ensure consistency across the report, the cut-off date for data collection was set at 31 November 2012.

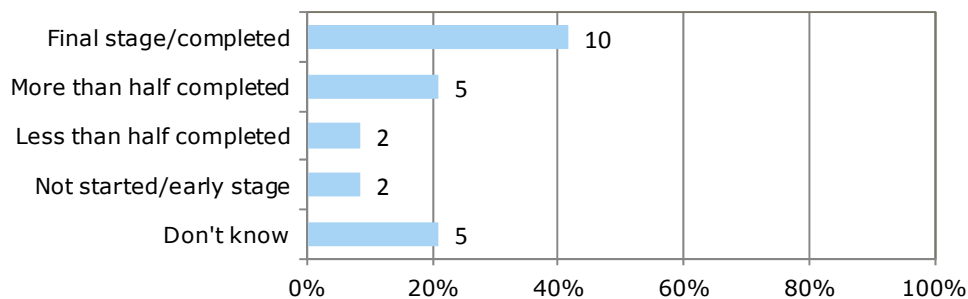
achieved, and that no more work was foreseen at the time of the data collection. This assessment relies on the evaluator's best understanding of the achieved work or the work that will be conducted, based on the information provided by the European Commission's action leaders.

Four actions were suspended. Some were deliberately postponed in order to ensure higher coherence with other policies or actions (e.g. Action 2.3, which relied on results of the E-Frame project, or Action 2.1, where 2012 EasyWay guideline results might influence the relevance of the action with respect to current needs). Action 3.3 was suspended due to a lack of available human resources, hence also a matter of priority.

Completion level

Figure 6, below, indicates the level of completion of the actions according to the European Commission's best assessment. In the absence of a well-established work programme, milestones and final output for most actions, the contractor was not in a good position to make an accurate assessment. As such, respective action leaders for each action were responsible for the assessments; they reflect the most experienced view with regard to the amount of work conducted and the work required for the full completion of each action. As seen, it was the European Commission's assessment that most of the work planned has been completed or more than 50% completed.

Figure 6, Level of completion of the Actions



Actions are in their final stage if their level of completion is 80% or more. In addition to four completed actions⁴³, six actions are in their final stage of completion, this concerns actions: 1.3 1.4, 4.4⁴⁴, 5.1, 5.2 and 6.2.

Other actions are relatively advanced, e.g. Actions 1.1, 1.2, 3.1 and 3.5 (ca. 70% completed), and Action 4.2 (ca. 60% completed).

The degree of completion was not clear for five actions. The reasons for the lack of clarity for the action leader, as well as for the contractor, was that these actions have either an open-ended objective, or the work required will be based on the findings of a baseline study. As such, they could not be estimated at the time of this evaluation.

⁴¹ The elements of this action, namely, supporting the Implementation Platform for the harmonised introduction of pan-European eCall, the awareness campaigns and the assessment of the need for regulation have been completed 100%. Upgrading Public Safety Answering Points' infrastructures will take place as part of the HeEROs project.

⁴² This assessment regards only the establishment of the legal framework and structure that will allow the gradual build-up of specifications and standards in specific priority areas and Actions. The functional, technical, organisational, service provision specifications should be adopted as delegated acts (Art. 290 TFEU) as mandated by the Directive.

⁴³ Actions 1.5, 3.2, 6.1, and 6.4

⁴⁴ This assessment takes into account the work conducted in defining Mandate M/453 to support European Community wide implementation and deployment of Co-operative Intelligent Transport Systems and does not account for the work required in pursuing the approval (by the European Commission) of the remaining set of standards to be developed by the ESOs.

- No clear definition of the final output (e.g. Action 2.4, which had no clear plan on what outputs were to be expected, and Action 3.4, which had open-ended objectives).
- The scope of the final outputs of some actions rely on the findings and recommendations of studies conducted; no decision had been made on which recommendations will be taken-up or by whom (e.g. Actions 1.2, 5.1, 3.4, 3.3).

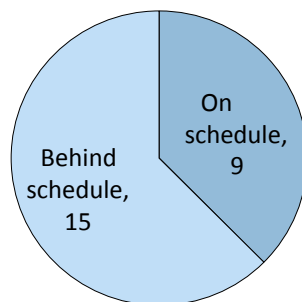
The above indicator relies heavily on the assessment of the action leaders. For this reason, it can be biased, especially in the absence of a well-established work programme, milestones and final output for most actions. It however reflects the best assessment of the evaluator, based on available information.

The lack of clearly established work programmes for a significant number of actions resulted in uncertainty, both internally for the European Commission staff, who “navigate by sight”, and externally for the stakeholders, who experience lack understanding and visibility of what to expect from the work of the actions (for more details on this difficulty, please refer to Section 4.3 of this evaluation)

Schedule

Figure 7, below, indicates the schedule for the actions. This assessment used the “target dates” indicated in the Action Plan. Suspended actions were included (they were considered on schedule if the target date had not yet expired). For completed actions, the date of completion was compared to the target date.

Figure 7, Timing of actions



Delays and suspensions reflect mainly the fact that the Action Plan proved to be very ambitious and much more complex than anticipated. This was a view shared by both the European Commission and stakeholders.

Some actions were deliberately delayed in order to ensure higher coherence with other policies or actions (e.g. Action 1.4, where the implementation of the action was delayed in order to be continued under the scope of a specific priority of the ITS Directive, or Action 6.3, whose second part, the assessment of EU funding for ITS, was delayed in order to align and assure coherence with the changes taking place in view of the 2014-2020 programming period.⁴⁵

One action (Action 2.2) has had its objectives integrated into a new (and broader) e-Freight initiative planned in the Commission Work Programme for 2013.

⁴⁵ Due to the fact that the Multiannual Financial Framework (MAFF) of the EU is under revision in the context of the 2014-2020 planning, a next phase of the Action, consisting in reviewing and assessing EU funding practices of ITS facilities and services, has been put on hold

4.1.2 Action Area level

Action Area 1 – Optimal use of road traffic and travel data

Action Area 1 is highly consistent, and includes actions that focus on the collection, exchange and use of traffic data by operators. This Action Area overlaps with priority actions (a), (b) and (c) of the ITS Directive, enabling the European Commission to adopt specifications.

Action Area 1 was well advanced; two of the five actions were finalised within schedule. Two were on their final stage of implementation, while one was experiencing a slight delay but more than half completed.

All actions in Action Area 1 have a direct relationship with the ITS Directive, which has planned priority actions with specific deadlines for completion. As a result, the actions behind schedule, in relation to the target date set by the Action Plan, can be considered on schedule when looking at the planned date of completion of priority actions under the ITS Directive. This reflects the fact that the required work was re-assessed in the context of the ITS Directive, and more realistic planning was done in terms of timing.

In light of the work still required to finalise the delayed actions, where possible, expected dates of completion were estimated by the action leaders in charge. As a result, all but one action (Action 1.2) have clearly defined dates for completion.

Action Area 2 - Continuity of traffic and freight management

Action Area 2 consists of a set of various measures focusing on interoperability, continuity of services, and ITS solution for traffic and freight management. The approaches used for the actions varied to a high extent.

The implementation of Action Area 2 faced difficulties: two of the four actions (Actions 2.1 and 2.3) were suspended and hence delayed; the scope of one action (Action 2.2) needed to be reviewed and its objectives were integrated into a broader eFreight initiative. The one on-going action and within schedule (Action 2.4) lacked a clearly defined planned output.

In light of the work still required to finalise the delayed actions, where possible, expected dates of completion were estimated by the action leaders in charge. However, there are currently no planned dates of completion for any of the actions in Action Area 2.

Action Area 3, Road safety and security

Action Area 3 consists of a set of measures focusing on ITS applications for road safety. The approaches used for the Actions varied to a high extent across Actions.

Within Action Area 3, two actions were on-going and within schedule (Actions 3.1 and 3.4), two were delayed (Action 3.2 and 3.5) and one was suspended but still within schedule (Action 3.3).

With the exception of one action (Action 3.1), all actions in this Action Area lacked an updated planned date of completion due to the lack of clarity of some of the planned outputs (Action 3.4 and 3.5) or due to a lack of definition of the final output (Action 3.2)

Action Area 4, Integration of the vehicle into the transport infrastructure

Action Area 4 consists of a set of complimentary measures which focus on different aspects related to the integration of the vehicle into the transport system. The Action Area is strongly aimed at increasing interoperability on the long term through: the promotion of an open in-vehicle platform, the introduction of cooperative systems, the exchange of data between the infrastructure and the vehicle, as well as the action to take the necessary standardisation steps.

In line with the technically complex nature of the work within Action Area 4, the actions were on-going with a slight delay. All on-going actions were at different stages (e.g. Action 4.1 was less than half completed, Action 4.2 was more than half completed, and the overall degree of completion for Action 4.3 was not estimated because the individual work on the specifications for I2I, V2V and V2I were at very different stages within the action). Action 4.4 was on-going within schedule and close to completion.

The planned dates of completion for Actions 4.2 and 4.3 were revised to more realistic targets (2013 and 2015, respectively) in order to take into account the complexity of the issues at hand

Action Area 5, Data security and protection, and liability issues

Action Area 5 consists of two Actions that address the legal consequence of enhanced ITS deployment.

The implementation of Action Area 5 was advanced; the two actions were close to completion, albeit both experienced delays.

The planned date of completion for Action 5.1 was not clear due to the open-ended nature of the final output, as well as a lack of clarity with respect to the scope of the concrete measures to be taken (i.e. whether and how the study recommendations should be taken into consideration).

Action Area 6, European ITS cooperation and coordination

Action Area 6 consists of a set of actions aimed to improve the policy-making framework for ITS through enhanced decision-making processes and instruments, and cooperation between all parties involved at European level.

Action Area 6 was mostly completed. Two of the four actions were completed within schedule. Action 6.3 was suspended until there was agreement on the scope of the 2014-2020 Multi Annual Financial Framework.⁴⁶

Action 6.2 was delayed but close to completion. It required internal review in order to define the future of the action with respect to ensuring sustainability of results.

4.1.3 Conclusion

Overall, the implementation of the Action Plan was well advanced: four actions were completed and a significant proportion of the ongoing actions were close to completion.

Most on-going actions were experiencing delays. The delays were motivated, for the most part, by the fact that the Action Plan's objectives were overly ambitious in relation to the complexity of the area where they seek to have impacts.

Delays and suspensions were, in a number of instances, voluntary, due to the desire to ensure complementarities with other policies (e.g. Actions 2.1, 2.3, 6.3).

A number of actions lacked a sufficiently defined work plan and final output, resulting in uncertainty and a lack of visibility for both the European Commission and stakeholders.

⁴⁶ The Multiannual Financial Framework (MFF) translates into financial terms the Union's political priorities for at least 5 years. It sets annual maximum amounts (ceilings) for EU expenditure as a whole and for the main categories of expenditure (headings).

4.2 Participation and awareness of the ITS stakeholder community

This section addresses the following evaluation question:

- **EQ2: To what extent is the ITS Action Plan known and its progress followed/reported among the ITS stakeholder community?**

The sources of evidence include the full set of data: online survey and interviews at the Action Plan level, as well as aggregate findings resulting from the analysis of all actions (interviews, survey and desk research at Action level).

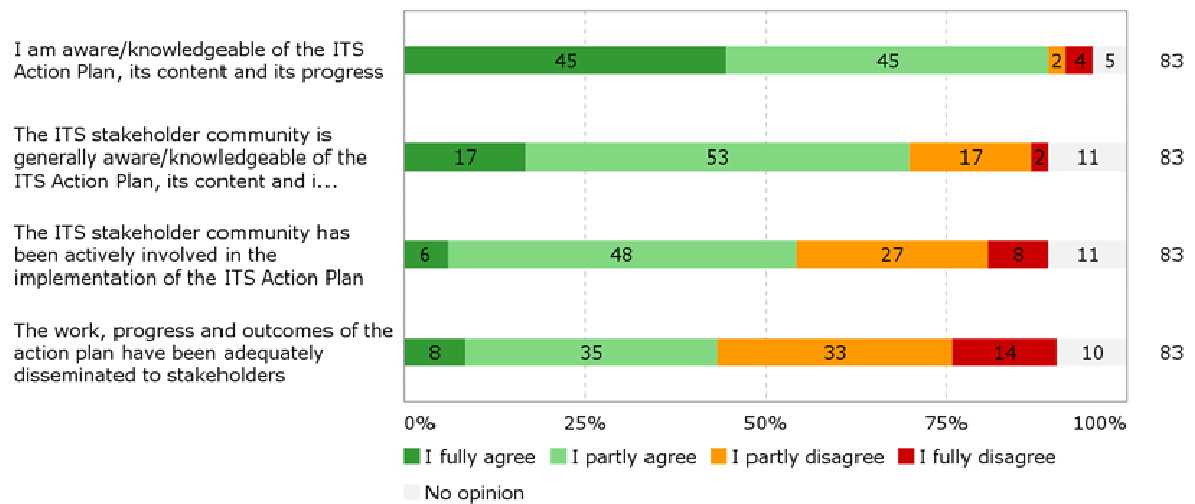
In order to answer this evaluation question, three indicators were examined: 1) the **level of involvement** and **participation** of stakeholders in the implementation of the Action Plan, 2) the **level of dissemination** activities and 3) the **level of awareness** of the actions among the community of stakeholders.

4.2.1 Action Plan level

The results of the survey, as shown in Figure 8 below, indicate that the survey respondents and, more generally, the ITS Community were aware of the ITS Action Plan, its content and its progress.

However, the respondents were generally less positive with respect to the actual involvement of stakeholders in the implementation of the ITS Action Plan, and even less satisfied with the dissemination activities.

Figure 8, To what extent do you agree with the following statements on the level of awareness of the ITS action plan?



Stakeholder involvement and participation

In this section:

- Stakeholder involvement is defined as the extent to which the European Commission intended to involve stakeholders in the implementation of the Action Plan and actions.
- Stakeholder participation is defined as the extent to which stakeholders actually took part in the implementation.

In the survey (Figure 8 above), 54% of respondents agreed, at least to some extent, that the ITS Community, in general, was actively involved in the implementation of the ITS Action Plan.

Respondents were asked to comment on this question; four stakeholders mentioned the lack of involvement of the whole scope of the stakeholder community was a problem (*"The ITS stakeholders have not been fully involved - only selected stakeholders are accessed"*). The Action Plan was also criticised for being too "industry-driven", which was also reflected in interviews with stakeholders.

Interestingly, the views expressed by respondents representing organisations were much more positive with respect to the involvement of the stakeholder community in the implementation of the plan than the views of respondents answering in their own capacity; only 38% of respondents answering in their own capacity partially or fully agreed with the statement that the ITS stakeholder community was actively involved in the implementation of the ITS Action Plan. This contrasts with the c.a. 65% of positive views from respondents answering on behalf of their organisations.

By area of activity, the most positive views expressed in the online survey with respect to the involvement of the stakeholder community in the implementation of the Action Plan came from the automotive industry and users associations (four out of the five respondents in each of the respective areas expressed positive views, and one respondent in each area had no opinion) and equipment manufacturers/suppliers (five out of seven respondents expressed positive views). At the opposite spectrum, respondents from research organisations expressed mainly negative views (only four out of twelve respondents expressed positive views in this regard).

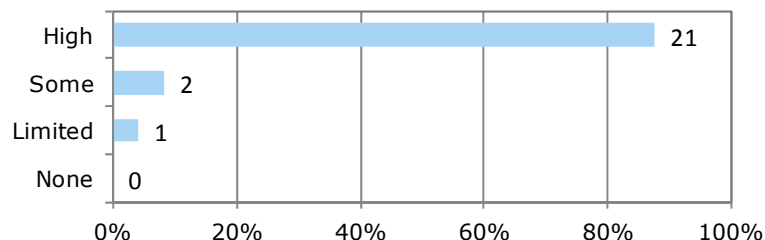
The views from Member State administrations were close to the average (57% of respondents⁴⁷ from Member State administrations expressed positive views).

Meanwhile, when asked about the main difficulties in the implementation of the ITS Action Plan (see also section 4.3 below), seven survey respondents indicated that it was not only the European Commission's responsibility to involve the widest range of stakeholders, but also the stakeholders' responsibility to engage themselves in cooperation with the European Commission and other partners. Four respondents mentioned the lack of supervision at the national level and the lack of involvement of the national administration as a problem.

The analysis of Actions reflects well the above considerations, although the analysis suggests a more positive assessment than the survey.

As indicated in Figure 9, below, the analysis of Actions shows that, overall, there is a high level of **involvement** of the stakeholders in the implementation of the Actions.

Figure 9, Involvement of stakeholders in the implementation of the actions



Involvement of stakeholders in the implementation of the actions was ensured by:

⁴⁷ 19 answers in total from respondents which either represent or work in a Member State administration

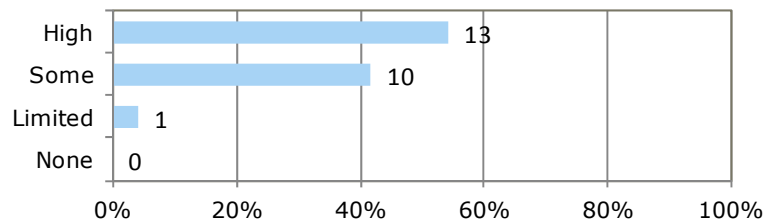
- consulting key stakeholders on the scope of the envisioned action in the planning phase in order to set the precise scope of the future action (e.g. Actions 2.1, 2.3 and 6.4);
- organising and conducting stakeholder workshops in collaboration with external consultants for consultation, data collection and dissemination purposes, usually as part of a study (approach used for most actions);
- coordinating with stakeholders and other organisations that perform activities in parallel (e.g. collaborating with the DMWG and the RIP in the context of Action 1.3, collaboration with the Easyway project on Actions 1.1 and 2.1, the E-FRAME and the Frame forum in the context of Action 2.3, collaboration with iMobility on Action 3.3, etc);
- involving stakeholders directly in the production of the outputs of the actions, especially in the case of the definition of standards and specifications (e.g. most actions in Action Area 4) or by setting up an expert groups (Action 6.4).

For suspended actions (Actions 2.1 and 2.3), the involvement of stakeholders was assessed as “some”. In the case of Action 2.1, the involvement consisted of a number of face-to-face interviews and discussions with regard to the identification of the most important topics and key issues to be assessed for the purposes of ensuring continuity of services. For Action 2.3, European Commission action leaders were in contact with a number of highly relevant stakeholders active in the area (e.g. the FRAME and E-FRAME) in order to be aware of developments and to inform each other of progress and issues.

The involvement of stakeholders was assessed as “limited” in the case of Action 4.1, as the action was currently in an early stage.

However, as illustrated in Figure 10, below, the actual level of **participation** of stakeholders in the implementation of the actions is lower than the intended involvement, although still high overall.

Figure 10, Participation of stakeholders in the implementation of each action



Some discrepancy was observed between the planned involvement of stakeholders as presented in the section above and the actual level of participation of stakeholders. The level of participation reflected the level of commitment and engagement of stakeholders in the activities performed, but also reflected the actual implementation of the planned stakeholder involvement.

The discrepancies between the intended involvement and the actual participation are explained by:

- a relative lack of actual dialogue between the stakeholders and the European Commission during workshops (e.g. Action 1.2);
- relatively disappointing stakeholder participation in consultation activities such as interviews, surveys, requests for written contributions, etc. (e.g. Actions 1.2, 1.4, 3.3, 5.1 5.2, 6.3).

Dissemination to stakeholders

In the survey, only 43% of respondents agreed that the progress and outcomes of the Action Plan had been adequately disseminated to stakeholders, at least to some extent. This was below what was expected in light of the dissemination efforts made by the European Commission.

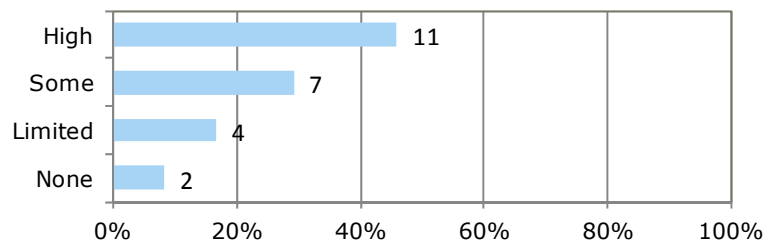
Eleven survey respondents (ca. 13%) further insisted on this issue through open comments. Four of them specifically emphasised that the European Commission's communication was poor and provided insufficient information, as well as too little clarity with respect to the progress and expected outcomes of the ITS Action Plan.

The survey results contradicted the evidence collected in the analysis of Actions, which indicated a rather high level of dissemination. It was the evaluator's view that this rather negative feedback echoes the stakeholders' confusion (and somewhat frustration) about the intentions of the European Commission, who was not always clear and transparent about the final goals of each action and how to reach them (*fuzzy process, fuzzy planning: it is hard to get information*). This reflected the overall lack of clearly established work programmes and poor project management, already commented in section 4.1.1 above and further elaborated on in section 4.3)

Survey respondents who provided answers to specific questions at the action level indicated that they were overall well informed of the given action's status of implementation. Keeping in mind the positive bias (it can be assumed that only well informed respondents answered these questions), this somehow softens the above conclusions (see survey results of Q25 in Appendix 3).

The analysis of Actions indicates that the European Commission has done well with respect to the dissemination of results (final or intermediary), as indicated in Figure 11.

Figure 11, Dissemination of outputs (final or intermediary) for each action



The European Commission used a mix of dissemination activities for communicating results and work progress to stakeholders. Among the methods for dissemination used by the Commission are:

- online publications on the website of DG Move (e.g. Actions 1.1, 1.3, 1.4, 1.5, 3.4, 3.5, 4.1, 6.3);
- dissemination through consultation of stakeholders on intermediary/final results (e.g. workshops conducted under Actions 1.1, 1.2, 1.3, 1.4, 1.5, 3.2, 3.4, 5.2);
- dedicated communication activities such as press conferences (e.g. Action 1.5) and ITS conferences (e.g. Actions 1.1, 5.2, etc.);
- awareness raising campaigns (e.g. Action 3.2, presentation in front of the European Parliament by the winners of the Smart Mobility Challenge in Action 1.5);
- partnerships with other organisations for promoting certain activities (e.g. the mobility challenge of Action 1.5).

For most actions, most of the methods listed above were used at different stages of implementation. For example, in the case of Action 6.4, the European Commission communicated directly with the relevant associations, published regular updates on the website of the Register of the Expert Groups, organised a workshop with ERTICO and EUROCITIES, organised a panel at the ITS World Congress , etc.

The analysis revealed that the results (final or intermediary) were disseminated to a high extent for 11 actions and to some extent for 7 actions.

The results were not disseminated or disseminated to a limited extent in the case of 6 actions. These actions were either not implemented or suspended (Actions 2.1, 2.3, 3.3), or are in an early stage of implementation (Actions 4.1, 4.4). In the case of Action 1.4, from the data collected, it appears that the results have only been published online.

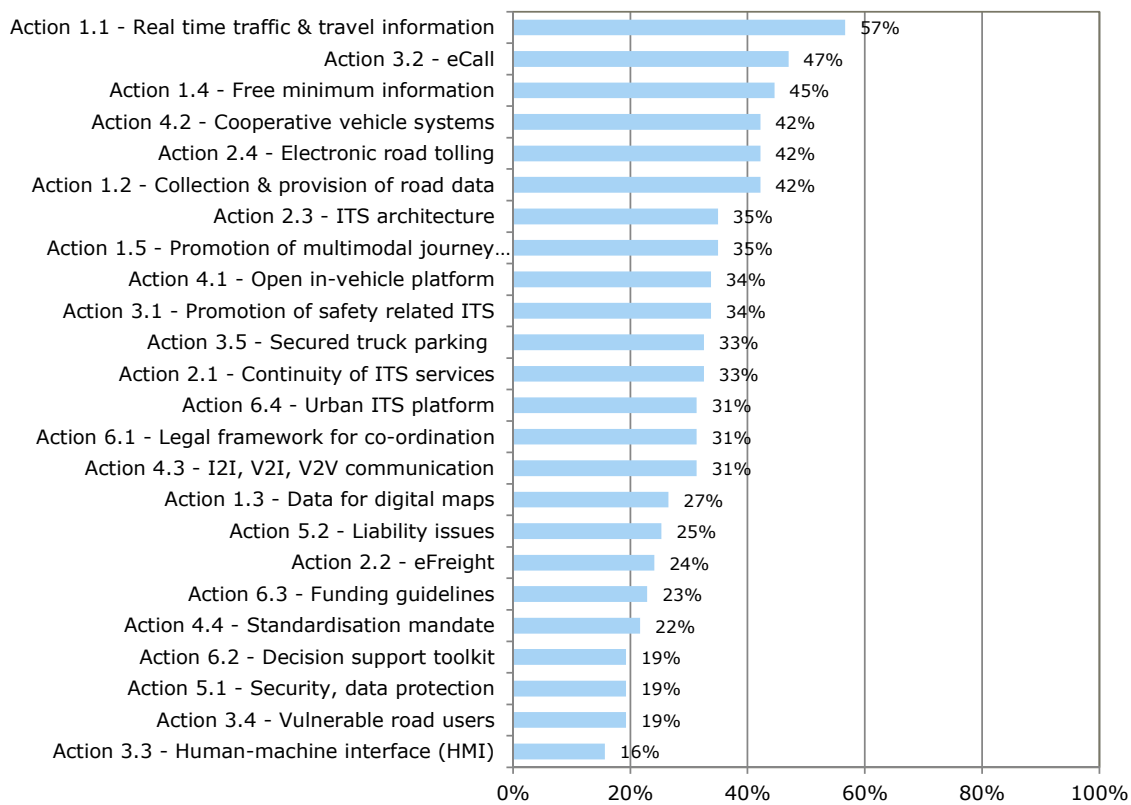
Stakeholder awareness

In the survey, 90% of respondents fully (45%) or partially (45%) agreed with the statement that they were aware/knowledgeable of the ITS Action Plan. This is a highly positive result. However, the survey was distributed through the European Commission's own stakeholder database, which implies a positive bias as far as the level of awareness is concerned. The results of the survey showed that the awareness levels were consistent across the type and areas of activity of stakeholders.

In order to balance this inherent limitation of the survey, respondents were asked to what extent they considered the ITS community (in general) to be aware/knowledgeable of the ITS Action Plan, its content and its progress. The survey results were slightly less positive; 70% of respondents fully (17%) or partially (53%) agreed that the ITS community, in general, was aware of the Action Plan.

As part of the survey, respondents were asked to indicate the actions of the ITS Action Plan that they have participated in or followed the progress of. This was a weak awareness indicator, since it explained as much about the profile (and interest) of the respondents as the level of awareness of the action. However, the results revealed an uneven distribution of interest and awareness that is interesting to examine:

Figure 12, If any, which of the following actions of the ITS Action Plan have you participated in or been following the progress of? (Select all that apply) (n=83)



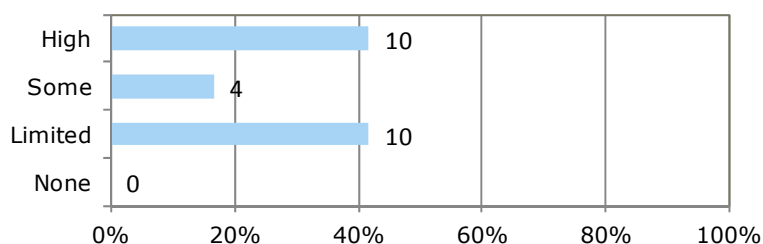
Actions exhibiting a higher degree of awareness among respondents were among those actions close to finalisation or already finalised (with the exception of Actions 4.2 and 4.3, which were not close to finalisation). Participation and dissemination were found to be high in the case of those actions.

Actions that were known to a limited extent by respondents were suspended (e.g. Actions 3.3, 6.3), not disseminated to a sufficient extent by the European Commission (e.g. Actions 1.3, 2.2, 6.2), or at an early stage of implementation (e.g. Action 2.2). The results were somewhat curious with respect to Actions 5.1 and 5.2, which were disseminated to a high extent and close to finalisation, yet limited awareness among participants in the survey was found.

The analysis of Actions brought, in addition to the findings of the survey, more information with respect to the level of awareness of actions. In addition to the results obtained from the survey, an assessment of the general level of awareness and knowledge of the interviewees was also taken into account. This indicator was also fairly weak as it was based, to some extent, on interviews with key stakeholders selected on the basis of their knowledge and/or involvement in the implementation of the actions. In principle, this should result in a positive bias with regard to their level of awareness of the progress and outcome of the ITS Action Plan. However, the assessment made during the interviews did not significantly offset the relatively negative results obtained in the survey, as it was found that not all stakeholders had a good understanding and knowledge of the implementation and progress made in the actions.

The overall level of awareness among interviewees is illustrated in Figure 13, below.

Figure 13, Level of awareness on the progress among interviewees/respondents



Finally, it should be noted that very few interviewees, including within the European Commission, proved to be capable of answering questions on the Action Plan overall. This indicates that stakeholders were very much focused on specific fields, hence also indicating a limited degree of complementarity and cross-fertilisation between actions.

4.2.2 Action Area level

Action Area 1 – Optimal use of road traffic and travel data

The level of awareness of Action Area 1 was found to be generally high.

The analysis of each individual action showed that all actions within this Action Area were planned with a high level of stakeholder involvement. Actual participation was, generally, in line with the intended stakeholder involvement.

The analysis of Actions indicates that the dissemination efforts were very high for Actions 1.1, 1.2 and 1.5. This is consistent with the results of the survey, where these actions received high levels of awareness. For Actions 1.3 and 1.4, no specific dissemination activity other than publication of the studies was conducted on the website. However, in the survey 48.7%⁴⁸ of respondents answered that they followed or participated in the development of Action 1.4.

Action 1.3 was found to have involved stakeholders to a high extent and was implemented with a high degree of stakeholder participation. In the survey, however, only a limited share of the respondents declared that they followed or participated in this action⁴⁹. The relatively limited interest of the survey respondents could be due to the fact that the work on this action was completed in December 2011, approximately one year before the data collection phase of this evaluation.

Action Area 2 - Continuity of traffic and freight management

Within Action Area 2, two out of four actions were suspended (e.g. Actions 2.1 and 2.3). This impacted the result with respect to awareness, making it difficult to provide a general answer.

The analysis of Actions found that participation of stakeholders was high in all actions within this Action Area, even those that were suspended.

Dissemination activities were very limited in the context of this Action Area; no dissemination was done with respect to the suspended actions (2.1 and 2.3), and there were also few dissemination activities in the context of Action 2.2. Dissemination activities were only conducted for Actions 2.2 and 2.4.

⁴⁸ A result within the high range of results, indicating a high level of awareness.

⁴⁹ Only 29% of respondents answered that they followed and participated in Action 1.3.

The survey results were consistent with the findings presented in the analysis of Actions and showed that stakeholder awareness of Actions 2.1, 2.2 and 2.3 was generally low. In total, 42% of the survey respondents answered that they participated in or followed the progress of Action 2.4, which is in the higher range.

Action Area 3 - Road safety and security

It was assessed that awareness and knowledge of Action Area 3 was generally satisfactory, and the progress was found to be followed and reported at least to some extent among the ITS Community.

All actions were implemented with a high level of planned involvement and actual stakeholder participation. Participation in the implementation of Action 3.3, which was suspended, was also been found satisfactory, a stakeholders engaged in a number of ways before the suspension of the action.

The analysis of Actions revealed that ample dissemination activities were conducted within this Action Area. Dissemination activities for Actions 3.1, 3.2 and 3.4 were to be high, and Actions 3.3 and 3.5 were satisfactory ("some").

With respect to overall awareness, the survey results showed relatively high differences between actions within Action Area 3. 51.3% of respondents indicated that they participated in or followed the progress of Action 3.2; this was one of the highest results out of all actions. 36% and 35% of respondents responded that they participated in or followed the progress of Actions 3.1 and 3.5, respectively; this was within the medium range out of all actions. Actions 3.3 and 3.4 saw very low results (17% and 21%, respectively)

Action Area 4, Integration of the vehicle into the transport infrastructure

In general, Action Area 4 was not close to completion and some actions were in the early stages of implementation. This made it difficult to provide an unequivocal answer to this evaluation question on the Action Area level.

Stakeholders participated in and were involved to a high degree in two (Actions 4.2 and 4.3) of the four actions within Action Area 4. Stakeholders became more active in Action 4.4 once the standardisation mandate was put in motion; however, it was not possible to provide a conclusion on the general level of participation in the standardisation process.⁵⁰ Action 4.1 was at too early of stage to provide a relevant analysis.

Two of the actions (Actions 4.2 and 4.3) within this Action Area benefited from high levels of dissemination activities, while outputs (intermediary or final) for Actions 4.1 and 4.4 were disseminated to a more limited extent. This could also be due to the fact that the two actions produced few concrete deliverables.

The overall survey results with respect to awareness were somewhat consistent with the two findings on participation and dissemination: 46% of respondents answered that they were aware of the progress or were involved in Action 4.2. The figure was approximately 35% for Actions 4.1 and 4.3, and very low (23%) for Action 4.4.

⁵⁰ There was no evidence to support the notion that all relevant stakeholders were involved in and contributed to the standardisation process.

Action Area 5, Data security and protection, and liability issues

The overall awareness and knowledge of Action Area 5 and the level the ITS community followed the progress and outputs was unsatisfactory.

The analysis of Actions showed that although it was planned to implement both actions within this Action Area with a high degree of stakeholder involvement, the level of actual engagement of the community was below expectations for both actions.

Moreover, the analysis of Actions indicated that large efforts were done with respect to disseminating the outputs (intermediary or final) of these actions to stakeholders. However, despite these efforts, the survey results indicated only 21% and 28% of respondents followed or participated in the progress of Actions 5.1 and 5.2, respectively, which is within the lower range of results.

Action Area 6, European ITS cooperation and coordination

The results varied within Action Area 6 with respect to the evaluation question. It was found that Actions 6.1 and 6.4 were well known; the ITS community followed their progress and results. On the other hand, results were unsatisfactory in terms of awareness for Actions 6.2 and 6.3.

The analysis of Actions showed that all actions had a high level of planned and actual stakeholder involvement and participation during the course of their implementation. Actual participation was relatively lower in the case of Action 6.3 compared to the other actions.

The analysis of Actions also revealed that the European Commission performed a high level of dissemination activities for Actions 6.1 and 6.4. However, fewer dissemination efforts were done for Actions 6.2 and 6.3. In the case of Action 6.2, the European Commission itself took few steps to disseminate the action, but the consortium managing the 2DECIDE project disseminated the results of the project to a high extent.

The survey results were in line with the assessment of the dissemination activities performed by the European Commission. 34.2%⁵¹ of respondents answered that they followed or participated in the progress of Action 6.1; the same result was also received for Action 6.4. Only 21% and 25% of respondents followed or participated in the progress of Actions 6.2 and 6.3, respectively.

⁵¹ This result was among the average results for all actions.

4.2.3 Conclusion

The ITS Action Plan builds heavily on various forms of stakeholder participation in all actions. This is a strong characteristic of the Action Plan.

Stakeholders did not fully acknowledge the considerable efforts made by the European Commission to involve stakeholders, as they considered insufficient involvement of the ITS community. Some stakeholders criticised the fact that only "selected" stakeholders, mostly from industry, were involved.

For some actions, the actual level of stakeholder participation was below expectations. This lack of involvement from the whole ITS community was raised as an issue by a number of stakeholders.

In general, the European Commission made considerable efforts to disseminate the results of sufficiently advanced actions. For some actions, dissemination was limited to a publication on a website and a presentation in an event, and as such were probably insufficient to generate results.

Stakeholders indicated that the communication on the ITS Action Plan was not always clear. Insufficient understanding with respect to the progress and the expected final outcomes was reported by the community, which also reflected the lack of clear goals and work programmes at the actions level.

Overall, for Actions that are sufficiently advanced, the ITS Action Plan is known and its progress is being reported and followed among the ITS stakeholder community.

4.3 Successes and difficulties with respect to the implementation of the ITS Action Plan

This section addresses the following evaluation questions:

- **EQ3: What are the main success/positive elements with respect to the implementation of the ITS Action Plan?**
- **EQ4: What have been/are the main difficulties/issues in implementing the ITS Action Plan?**

It also contributes an answer to the following question (see also section 8.1):

- **EQ5: How can/should the implementations of the various actions be improved?**

This section focuses on implementation issues. Successes and difficulties with regard to relevance, effectiveness and efficiency are mentioned in other chapters of this report.

The sources of evidence include the full set of data: online survey and interviews at the Action Plan level, as well as aggregate findings resulting from the analysis of all actions (interviews, surveys and desk research at the action level).

4.3.1 Action Plan level

4.3.1.1 Success/positive elements

In the survey, respondents were asked to answer what the main successes/positive elements were in the implementation of the ITS Action Plan. 61 respondents (out of 83) submitted comments. Most answers related to elements better suited for elaboration in other chapters of this report, and as such are not thoroughly commented on in this section. These include, *inter alia*:

- **Relevant priorities**, in terms of Action Areas and actions. A strong focus on data- and interoperability-related issues was most frequently mentioned (see section 4).
- **Strong contribution** of the Action Plan to raising awareness of ITS issues (see section 6).
- **A number of success stories**, among which eCall and the progress made in developing standards and specifications were the most frequently mentioned (see section 6).

Good cooperation and involvement of the various stakeholders: in answer to the open question mentioned above, fourteen respondents⁵² stated that the cooperation and involvement of different stakeholders was a factor contributing to the successful implementation of the ITS Action Plan. In their view, the Action Plan encouraged the stakeholders to debate and compare issues in different Member States, strengthen the network, present different cases and try to find common solutions. Strong involvement and participation of the ITS community were also mentioned by interviewees as a key success factor.

Positive contribution of the ITS Directive: nine respondents⁵³ placed an emphasis on the importance of the ITS Directive as a success factor for implementation. The Directive contributed toward significantly increasing awareness, brought ITS higher on the political agenda of the Member States, and gave incentives to governments to take action and contribute to deployment of the ITS Action Plan. The ITS Directive, as such, was a catalyst for the implementation of the Action Plan, as it contributed toward the creation of the necessary momentum for a successful implementation. In this respect, the timing for adopting the ITS Directive soon after the launch of the Action Plan was critical.

Structuring role of the ITS Action Plan as a roadmap: five respondents⁵⁴ underlined the framework provided by the Action Plan as a positive element for the implementation of the actions. As such, the Action Plan defines a set of common priorities and objectives, as well as a timeframe. This, according to stakeholders, contributed to the preparation of the ITS community to hit the ground. It was also mentioned by interviewees that the ITS Action Plan was a relevant framework for a key success factor.

In the analysis of Actions, the evaluator identified additional positive elements:

The European Commission's role as a coordinator, facilitator and moderator was a key success factor mentioned by all stakeholders. In seven actions (Actions 1.4, 1.5, 3.1, 3.2, 4.2, 6.1 and 6.4), the role of the action leaders in coordinating and steering the work was explicitly praised, despite very ambitious targets and high complexities involving a diverse group of stakeholders. In this respect, the fact that some actions contributed to **forming a consensus** among a variety of stakeholders, sometimes with contradicting interests, was mentioned as a success.

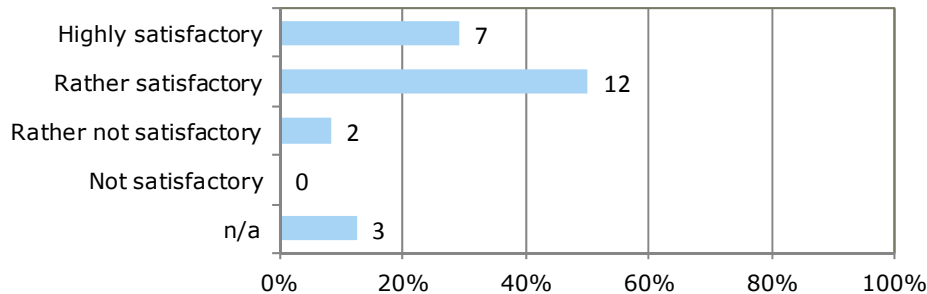
⁵² 9 organisational and 5 personal views representing a wide range of activities which included, *inter alia*, ITS Service providers, MS administration, Research organisations, Trade/business associations, Road operators, Users association etc

⁵³ 5 organisation views and 4 personal which included 5 Member State administrations, road operators, consultancy firms and ITS service providers

⁵⁴ 3 organisation views and 2 personal views from different fields of activities including Road operators, ITS Service providers, a research organisation, consulting and the Automotive industry

Overall good quality of outputs: As part of the analysis of Actions, interviewees (Commission staff and stakeholders) were explicitly asked to assess the quality of available outputs. Overall, their assessment was positive, as indicated in Figure 14 below.

Figure 14, Assessment of the quality of available outputs

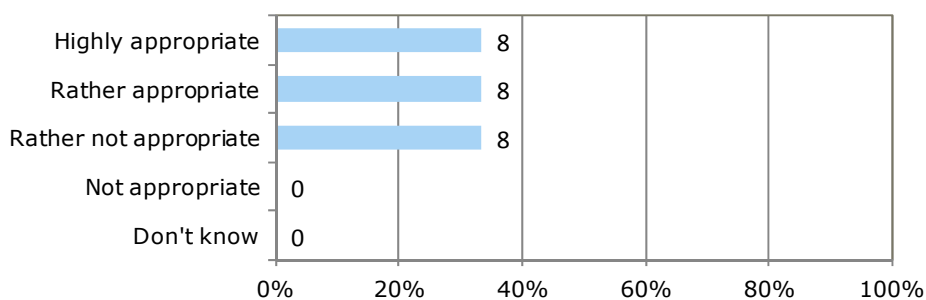


The main justifications for this positive assessment included:

- **a high level of technical expertise** that contributed to a strong validity of findings (e.g. Actions 2.4, 3.4, 4.2, 6.1, 6.4);
- **sound and clear conclusions and recommendations** (e.g. Actions 1.3, 3.4).

Appropriate implementation approaches for actions: the analysis of Actions indicated that, overall, the design of the actions, in terms of outputs, instruments used and overall implementation approach, was appropriate. As indicated in Figure 15 below, one-third of the actions were assessed as highly appropriate, and one-third were assessed as rather appropriate. The remaining one-third of actions were assessed as rather not appropriate, and no action was assessed as not appropriate. This was a positive assessment, but it also indicated that an overwhelming number of relevant actions (in terms of their operational objectives formulated in the Action Plan) were not always made operational in the best way possible. This could link to weak micro-management affecting the overall project management, as analysed in section 4.3.1.

Figure 15, Appropriateness of the design of the Actions



More specifically, key positive aspects of the design of the actions included:

- **Incremental approach:** in a large number of actions, the first step consisted of a baseline study, which helped with the understanding of the state of play and the identification of important issues to be addressed in the scope of the actions. This could be, according to interviewees, a necessary step before deciding on further work.
- **Standards and specifications as relevant instruments:** a large majority of stakeholders interviewed agreed that a certain level of clarity and coercion was necessary to address interoperability issues, e.g. Action Area 4. On a similar note, the

possibility to build on **complementarities with the ITS directive** was one of the positive aspects mentioned in Action Area 1.

- **Strong participatory approach:** while the European Commission's leadership and top-down approach were welcome, the strong participatory approach was also positively perceived by stakeholders, since it enabled cooperation and knowledge-sharing within the ITS community, and generated interest and commitment (e.g. Action 6.4). As noted above, this particular aspect of the implementation of the Action Plan was the most frequently mentioned success in the survey (14 respondents mentioned this issue as an answer to an open-ended question on the positive aspects of the implementation of the ITS Action Plan).

It should be mentioned that, in some actions, these criteria were not met to the highest extent possible, and for this reason can also be mentioned as difficulties/issues.

The implementation of the Action Plan successfully took into account **parallel initiatives** and policies. As a result, **synergies and complementarities** were achieved and duplication of efforts avoided.

4.3.1.2 Difficulties/issues

In the survey, respondents were asked about the main difficulties/issues in the implementation of the ITS Action Plan. 63 respondents (out of 83) submitted comments.⁵⁵ In most cases, these comments were consistent with the results of the analysis of Actions.

Lack of project management and planning was one of the most frequently mentioned difficulties in the survey. Ten respondents⁵⁶ highlighted project management as a difficulty in the implementation of the ITS Action Plan. Most mentioned the lack of planning and coordination as a general issue. A few also added the lack of concrete targets, which offered little visibility to stakeholders. It was striking that these issues were not mentioned to such a significant extent by interviewees at the action level (on the contrary, good planning and management was an element explaining the successful implementation of Actions 1.5 and 6.4). One explanation could be that such statements were more difficult to make in interviews. Also, it must be acknowledged that project management must be discussed on a case-by-case basis, as the feedback of the stakeholders depends on their particular experience with the Action Plan. This being said, it was the evaluator's assessment that the implementation of the actions could have benefited from stronger project management set up at the action level.

The Action Plan set broad, ambitious and sometimes vague operational objectives at the action level (e.g. Actions 2.1, 2.4, 3.3, 3.4, 6.3), but they were not systematically made operational " in work programmes with clearly set objectives and milestones. There were, of course, a number of exceptions (Actions 3.1, 6.4 for instance, for which intermediary goals and milestones were set).

For all actions, "project fiches" were drafted at the start of the Action Plan in order to "operationalise" the implementation of the actions. However, not all project fiches were made available to the evaluator. Moreover, available fiches proved to be mostly outdated and did not fully take into account changes and developments that took place in the course of the implementation of actions. This indicated that "project fiches" were not systematically used.

Finally, it should be mentioned that over-ambitious targets set for the Action Plan, compared to the human resources allocated to its implementation, were one explanation for the lack of programme management (also see below). While the European Commission services tried to follow the schedule set in the Action Plan, they did not have enough resources and time to reflect on carefully designed work programmes for each action, and rather "navigated by sight".

⁵⁵ 41 (ca. 65%) of the comments corresponded to organisation views and 22 (ca. 35%) of the answers represented personal views.

⁵⁶ 4 organisation views and 4 personal views, the areas of activity included *inter alia* MS/regional/local administrations, Road operators, Research organisations, etc.

Lack of planning on (after) studies: the implementation of most actions (i.e. Actions 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.4, 3.3, 3.4, 3.5, 4.1, 5.1, 5.2) started with a baseline study in order to first assess the state of play and understand needs, and then to support a decision for further initiatives within the scope of these actions. The evaluator acknowledged the appropriateness of this approach. However, the lack of overall planning after the completion of the study, taking into account potential re-alignment or re-scoping of objectives in light of the results, was detrimental to the approach.

The specifications on the basis of the studies were not always sufficiently focused to serve the purpose of their actions, and as a result, a secondary round of data collection was necessary for the implementation of some of the actions (e.g. Actions 1.1, 2.1, and potentially 5.2⁵⁷).

Most study reports prepared and published under the Action Plan included recommendations, but the necessary steps for ensuring their follow up were not anticipated by the action leader. This left a gap in the action's implementation (e.g. Actions 3.4 and 5.1; for the former, some of the conclusions of the study were used for the preparation of an FP7 call), resulting in "stand alone studies". Therefore, some of the interviewed stakeholders and survey respondents criticised the Action Plan for being too "consultant driven"; consultants could not decide anything themselves, hence the importance of following-up on study recommendations.

Lack of (coordinated) funding: seven stakeholders mentioned the lack of identification and specification of concrete funding possibilities as a barrier hindering progress in the implementation of the ITS Action Plan. In this regard, the economic downturn, mentioned by five respondents, had a negative impact on the implementation of the ITS Action Plan, since it was detrimental to the capacity of deploying new ITS solutions.

Two survey respondents called for better coordination between EU funding, national funding, and the implementation of the Action Plan so the necessary financial support for deployment could be achieved and planned in advance. It is true that, from the analysis of Actions, little evidence exists of coordination between the actions of the Action Plan, the projects financed by the FP7, and the TEN-T programme (there were of course a few notable exceptions, such as Action 3.4). This reveals room for improvement in view of future deployment initiatives.

Difficulties in identifying clear business cases: six⁵⁸ respondents claimed that one of the recurring difficulties with the implementation of the Action Plan regarded the difficulties in identifying clear business cases for deployment. This was detrimental to stakeholder willingness to cooperate in deployment efforts. Three stakeholders mentioned the importance of carrying out impact assessments for all initiatives in order to ensure value for money on ITS investments. The focus on business cases is not new, but has become even more important with the economic crisis in 2012.

In line with the survey results, the analysis of individual actions identified the absence of business cases as a threat to the implementation of some actions (e.g. Actions 2.4, 3.5, 4.1). In a sense it resulted in a lack of willingness of those stakeholders to engage and support the Action Plan's objectives.

Bringing evidence in support of the definition of a clear business case, possibly through a cost-benefit analysis demonstrating the benefits of ITS deployment, was a necessity well understood by the European Commission. This was at the basis of any impact assessment launched by the European Commission to support its decisions. However, the exercise suffered from a lack of monitoring data and evidence of the potential impacts of ITS, as revealed especially in Action

⁵⁷ The assessment of quality of outputs has been done on the basis of the intermediary report, substantial work has been done to ensure that the final report (planned for December 2012) will be of satisfactory quality. Due to the timing of delivery, it was too early at the time of drafting this report to perform an assessment of the quality of the final report..

⁵⁸ 4 organisation views and 2 personal views, representing the views of ITS Service providers from the Telecommunication industry Automotive industry, one ITS consultant and one MS administration.

6.2. This was a major problem, as it will be necessary for ITS deployment to demonstrate that it contributes effectively to cleaner, safer and more efficient transport, and is worth the investment.

Overambitious targets: five survey respondents mentioned the inherent complexity of ITS and its attempt to embrace all issues at once as a source of difficulties in the implementation of the Action Plan.

As mentioned in Section 4.1 on implementation, it was widely acknowledged by all stakeholders that the Action Plan was overambitious, both in terms of scope and timing. Obviously, this was detrimental to the capacity of the European Commission to meet its targets, and **the allocated human resources proved to be insufficient.**

As presented in section 4.1 on the current status of the Action Plan, most actions were delayed and a number of actions were experiencing major delays (e.g. Action 1.1, 4.1). In general, the delays were explained by the fact that the targets were overly ambitious, the complexity of the issues at hand was under-estimated, and resources were not sufficient to meet the targets. Some actions also suffered minor delays as a result of the difficulties for the consultants to finalise their studies according to schedule (e.g. Action 5.2,), also reflecting an underestimation of the complexity of the issues at hand.

Focusing on a number of well prioritised and carefully designed actions would have probably enabled the avoidance of some of the issues mentioned in this section, especially the overall lack of project management.

Great diversity of stakeholders: the wide scope of actions required the involvement of a variety of stakeholders in a very complex area, which caused difficulties in coordinating and ensuring the involvement of all stakeholders. In this respect, five stakeholders mentioned an unbalanced representation of stakeholders in the work. Some stated that the Action Plan was too skewed towards the interests of service providers and did not sufficiently take into account user needs. This however should be looked at on a case-by-case basis; while some say that the users perspective was not sufficiently represented, the industry felt it was not sufficiently involved in the standardisation work. The lack of involvement of the Member States in the implementation of the Action Plan was also mentioned. To some extent, these statements contradict the findings of the in-depth analysis of actions that demonstrated that the implementation of the ITS Action Plan was done with a high degree of stakeholder involvement and participation (see Section 0 above).

It was the evaluator's opinion that the general frustration of stakeholders who felt they were not involved enough was due to insufficient clarity with respect to what the planned outputs of some actions would be and a perceived insufficient level of transparency with respect to the process of drafting specifications and standards by stakeholders, rather than a lack of intended stakeholder involvement. Efforts to increase clarity and transparency, perhaps through developing and disseminating work programmes and roadmaps including intermediary milestones, were recommended.

4.3.2 Action Area level

This section summarises key findings at the Action Area level. To avoid redundancy, it focuses on issues not discussed previously in other sections.

The analysis at the Action Area level takes into account successes/positive aspects and difficulties with respect to the following elements:

- the design of the action, including an analysis and assessment of implementation strategy and the choice of instruments used for the completion of the action and the achievement of the Action Plan's objectives;
- overall project management of each action that may have had an impact on the results of the action in terms of the realisation of the Action Plan's objectives;
- the overall quality of deliverables produced by the actions.

Action Area 1 – Optimal use of road traffic and travel data

Design and implementation strategy

All actions within this Action Area relied on baseline studies to decide future actions, including the definition of specifications. This was acknowledged as being the appropriate approach by interviewees and survey participants, since such studies set the baseline and potentially contribute to building consensus on the way forward.

The approach was said to be all the more appropriate when strong complementarities were ensured with the Directive and the definition of specifications. In the area of the provision and use of data, a large majority of interviewees considered that, to ensure the collection and exchange of (traffic) data by all operators, bottlenecks could only be solved with explicit sets of requirements. For this reason, it appears that specifications are, according to most stakeholders, the best approach to address data issues. In Action 1.2 and 1.3, the link to the ITS Directive and the preparation of specifications was weaker than in Actions 1.1 and 1.4.

In Actions 1.1 and 1.4, however, the European Commission tried to build on the complementarity of both actions. The baseline study that was supposed to prepare the ground for further initiatives (in the form of specifications) was designed to serve the purpose of both actions. This resulted in a broad study that could not fully meet the needs of Action 1.1.

Action 1.5, on the development of national multimodal door-to-door journey planners, was a particular case. The design and choice of instruments was assessed to be highly appropriate, and in order for the full realisation of the operational objective (i.e. promoting the idea of multimodal journey planners), the involvement and participation of all stakeholders was essential. The 1st Smart Mobility Challenge⁵⁹ launched by the Commission created a strong momentum for promotion among the stakeholders community. However, there were many prerequisites for the development and deployment of fully-fledged multimodal journey planners that were not yet fulfilled. The fulfilment of the action's vision, beyond its operational objective, requires a combination of digital maps, travel data, etc. Only then will the different elements be in place to plan a truly multimodal journey. This calls for a better account of complementarities in both the design and objective of an action relating to multimodal journey planners.

In the scope of Action 1.2 on the collection and provision of road data, one stakeholder mentioned that the work undertaken did not sufficiently distinguish between public and private data on the one hand, and between data, information and services provided based on the filtering of data and the use of information on the other hand. The distinction could strengthen the consistency of the work (of all actions), and could potentially ensure that sufficient consideration is paid to the interest of commercial traffic information providers (while also making sure that they did not benefit from a dominant position).

Success/positive elements

In general terms, the main success/positive elements with respect to the implementation of Action Area 1 were:

⁵⁹ http://ec.europa.eu/transport/its/multimodal-planners/index_en.htm

- The design, i.e. choice of instruments and implementation strategies, of the actions in Action Area 1 were assessed as appropriate overall. Out of five actions, four were assessed as rather appropriate in this respect (Actions 1.1, 1.4, 1.2 and 1.3) and one was assessed as highly appropriate (Action 1.5).
- Two actions were delivered on time, and two actions were close to completion, albeit with a slight delay.
- Planned and actual stakeholder involvement high overall (please refer to section 4.2.2).
- The level of awareness on the progress among interviewees/respondents of the actions within Action Area 1 were found to be generally high (please refer to section 4.2.2).
- The quality of the intermediary and/or final outputs was assessed as rather satisfactory for all actions within this Action Area.
- All actions of this Action Area had high or some contribution to raising awareness on the barriers of deployment of ITS in Europe (please refer to section 5.1).

More specifically, in the case of Action 1.1, a success factor was represented by the high degree of stakeholder involvement; the study⁶⁰ conducted in the context of Action 1.2 was of good quality; the recommendations of the study conducted under Action 1.3 were complete, bold, clear and simple; an agreement was reached regarding the scope of the free minimum information in Action 1.4; and the large submissions under the mobility challenge of Action 1.5 indicated high stakeholder commitment and increased attention for the study conducted, which was also of reasonable quality.

Difficulties/issues

In terms of difficulties relating to overall project management and quality of Action Area 1, the following comments can be made:

- For Action 1.1, as a result of the design of the action, a follow-up study is necessary to collect data required for further action under the ITS Directive.
- The action has not yet produced detailed recommendations or concrete proposals.
- In Action 1.2, the implementation faced certain delays due to difficulties on the contractors' side to execute what was agreed upon in the inception report, and the engagement and participation of stakeholders during the workshop were not satisfactory. There was no updated expected date of completion.
- In Action 1.3, the scope of the study proved to be larger than expected, which had led to the extension on the duration of the contracted study.

Some issues were raised regarding the need for follow-up activities, but no other major difficulties in implementation were identified in the case of Action Area 1.

Action Area 2 - Continuity of traffic and freight management

Design and implementation strategy

All actions had different approaches and common patterns were limited. However, it is interesting to note that most actions strived to build on existing initiatives external of the framework of the ITS Action Plan. This was a source of confusion with regard to the strategy to be adopted.

Action 2.1 provided a broad mandate for the facilitation of continuity of ITS services to the European Commission. Following an initial appraisal of a number of EasyWay deployment

⁶⁰ "Optimising the Collection and Provision of Road Data", D1 & D2 First Analysis & Proposal for TMP Checklist Guidance, 5 October 2012

guidelines, an assessment of the EasyWay guidelines (initially the 2010 Guidelines) was planned to provide guidance for the review of selected areas considered relevant for fostering EU-wide continuity of ITS services. As the study failed, the action was suspended to wait for the EasyWay 2012 (the objectives of the action were brought to the attention of the EasyWay consortium in order to achieve synergies between the aim of the action and the anticipated outcome of the project). Suspending the action was probably the right decision, but no new approach for the Action has been defined yet, and the objective remains broad and unclear. In addition, stakeholders interviewed in connection to the action tend to believe that there was a need for action by the Commission to ensure continuity of services,⁶¹ as they believe that too voluntary-based approaches are not sufficient.

Action 2.3, on the deployment of an updated multimodal European ITS Framework architecture and definition of an ITS framework architecture for urban transport mobility, was suspended in order to wait for the finalisation of the E-FRAME project, which started at the same time as the Action Plan. E-FRAME aimed to provide support for the creation of inter-operable and scalable cooperative systems throughout the EU, and suspending the action was certainly the right decision to ensure coherence and synergies. However, while the E-FRAME project is now completed, no new approach for the Action has been defined yet.

Strategy on Action 2.2, on E-freight deployment, is under development in the frame of the preparation of the e-Freight initiative planned for 2013. It did not rely on a clear and dedicated strategy; rather, it relied on a set of FP7 projects and conferences. However, it soon appeared that a cross-modal initiative on e-Freight was needed (rather than a focus on road transport only). A Work Programme is expected in 2013.

The objective of Action 2.4 was to support the implementation of Directive 2004/52/EC on the European Electronic Toll Service (EETS). The approach, building on dialogue, coordination and supporting tools, was assessed appropriate by stakeholders. However, the lack of clear results cast some doubt on whether a forced European-wide implementation of the EETS is the appropriate strategy. This might call for a break in the approach. Among other ideas, the promotion of regional deployment was the most frequently mentioned.

Success/positive elements

In general terms, the main success/positive elements with respect to the implementation of Action Area 2 in terms of overall project management and quality of deliverables were:

- Overall high planned and actual stakeholder involvement for the ongoing actions. Stakeholders were even involved to a satisfactory degree in the two suspended actions.
- The decision to suspend Actions 2.1 and 2.3 in order to align with ongoing initiatives was the correct approach.
- The quality of the outputs was assessed to be highly satisfactory for Action 2.4.
- Outputs of Action 2.2 cannot be judged upon for the time being since the release of the e-Freight initiative is planned for 2013.

More specifically, for Action 2.2, the main aspects for e-Freight were defined and a common framework and some standards already deployed in practice. For Action 2.4, rights and obligations were clearly defined and led to adoption by the Member States.

⁶¹ This could either be achieved horizontally or could also be mainstreamed in the context of the other actions as well

Difficulties/issues

The main difficulties/issues with respect to the implementation of Action Area 2 were:

- Following the decisions to suspend Actions 2.1 and 2.3, no decisions were taken to restart the actions and none of these actions have a clear planned date of completion.
- Some of the study deliverables attempted in Action 2.1 were not good, not detailed enough and not sufficiently precise. As a result of these difficulties, the action not implemented, the planned study was stopped and settlement was finalised with the contractor.
- In the case of Action 2.4, the indicated degree of completion was not available because precise output of the action was not clear and the objective of the action was open-ended. Some difficulties were encountered when attempting to engage Member States for EU-wide implementation.

Action Area 3, Road safety and security*Design and implementation strategy*

The incremental implementation strategy used for most actions proved to be appropriate, in the sense that it enabled a careful identification of needs within the actions before moving forward. For example:

- Action 3.4 initially called for “appropriate measures” to improve the safety and comfort of vulnerable road users. First, a baseline study was carried out to screen ITS applications, identify positive impacts but also potential risks, and formulate recommendations on possible measures. On this basis, a research project was launched for in-depth analysis. Only then were measures taken to support deployment.
- In addition to calling for regulatory measures, Action 3.1 encouraged the deployment of further Advanced Driver Assistance Systems (ADAS) and promoted safety related ITS by funding research and deployment projects, promoting voluntary deployment, ordering standards and contributing to public awareness of the potential benefits. A regulation was adopted to support the deployment of mature solutions (advanced emergency braking systems (AEBS) and lane departure warning systems (LDWS) in heavy-duty vehicles. For other ADAS, a European Commission staff Working Group⁶² was established to examine their benefits before going for possible regulatory initiatives.

Action 3.3, on a safe on-board Human Machine Interface and the integration of nomadic devices, also took an incremental approach. It started with a baseline study assessing the regulatory frameworks in Member States and the impact of on-board and nomadic devices on safety, and planning for a second study to define the next steps.

Action 3.5, on secure parking places, set out to develop “appropriate measures”. Stakeholders mentioned that the collection of best practices on information and reservation systems for parking should have been prioritised; in their view, without a clear business case or clear benefits, some stakeholders were reluctant to deploy ITS solutions in this area. The impact assessment looked at these issues by assessing the impact of different options (including specifications). As such, the impact assessment was supported by a cost-benefit study⁶³ planned to be finalised by December 2012.

⁶² In line with the Road Safety Policy Orientations, the Commission is setting a Steering Group to produce in 2013 a Commission Staff Working Document on in-vehicle safety devices, including an assessment of the benefits of those systems, as well as an evaluation of the possible needed legislation.

⁶³ Support study regarding secure parking places for trucks and commercial vehicles, telematics-controlled parking and reservation systems

In Action 3.2, on e-Call, the combination of complementary instruments in a well-defined and coherent strategy proved to be particularly appropriate and a clear factor for success. The action combined an impact assessment, which clearly showed that the mandatory introduction of eCall was the best way to bring eCall's benefits to the citizens, a European eCall Implementation Platform (EeIP), which brought together representatives of the relevant stakeholder associations and national platforms to discuss technical details and practicalities of the implementation of eCall, a pre-deployment pilot project, a set of standards, and an awareness and education campaign.

Successes/positive elements

In general, the main successes/positive elements with respect to the implementation of Action Area 3 in terms of overall project management and quality of deliverables were:

- The design of the actions in Action Area 3 was assessed as appropriate for the majority of actions. Three actions were assessed as highly appropriate with regards to their instruments and implementation strategy (Actions 3.1, 3.2, and 3.4).
- Two actions were delivered on time, and another two actions were in an advanced stage of implementation, albeit delayed.
- Planned involvement and actual stakeholder participation high overall for all actions (please refer to Section 4.2.2).
- The quality of the intermediary and/or final outputs was assessed to be highly satisfactory for three actions (e.g. Actions 3.1, 3.2, 3.4) and rather satisfactory for the remaining two actions (e.g. Actions 3.3 and 3.5).
- Three of the five actions (Actions 3.1, 3.2, and 3.4) of this Action Area contributed to a high extent to raising awareness on the barriers of deployment of ITS in Europe (please refer to section 5); the remaining two also contributed to some extent.

More specifically, for Action 3.1, a success factor was the fact that the dialogue and cooperation between the different parties was good and constructive. For Action 3.2, the awareness raising campaign was a great success and led to a higher number of countries (inside and outside the EU) to join the initiative. In Action 3.3, although it was currently suspended, the study conducted did shed some light on the complexity and diversity of regulatory frameworks in different countries with respect to on-board devices. The research call for proposals under Action 3.4 was one of the most successful calls of 2012 in terms of applications received. Action 3.5 significantly raised awareness of ITS solutions in the area by sharing knowledge of the study conducted.

Difficulties/issues

The main difficulties/issues with respect to the implementation of Action Area 3 were:

- Action 3.3 was put on hold (due to a lack of resources, hence a matter of priority) and no plan was set to resume it, despite emerging needs in this area.
- In Action 3.5, there was initially a difficulty in gathering data and evidence on cost and benefits, reason for which some stakeholders were reluctant to move forward. It must be mentioned, however, that the political priority of Action 3.5 was raised in the Directive under priority actions e) and f). In addition, the impact assessment should be able to shed more light on the potential benefits of the policy options. The results of the study will need to be completed by ground pilot experiences led by Member States and aligned with the specifications.
- In the context of Action 3.4, there was no plan with regards to how, when and by whom recommendations of the study⁶⁴ were to be taken-up. The degree of completion was also

⁶⁴ Final Report Action 3.4–Safety and comfort of the Vulnerable Road Users, Amsterdam, 20 May 2011

not clear and the scope of “appropriate measures” created uncertainty with respect to the planned output of the action.

More specifically, the main difficulties/issues with respect to the implementation of Action 3.3 so far were:

- difficulties in ensuring continuity and complementarities within the European Commission in response to staff and organisational changes;
- insufficient clarity for Member States as to what to expect from the action (recommendation, mandatory framework), in turn resulting in a lack of support;
- an overly ambitious conducted⁶⁵ study, as a result becoming insufficiently comprehensive.

Action Area 4, Integration of the vehicle into the transport infrastructure

Design and implementation strategy

The implementation of Action Area 4 in general (e.g. Actions 4.3 and 4.4) built upon standards and specifications. Stakeholders considered these instruments relevant in order to ensure interoperability and remove barriers and obstacles to the deployment of ITS. Unsurprisingly, however, these instruments did not win unanimous support due to diverging interests. Standards and specifications were criticised in some instances. For example, in Action 4.3 on the definition of specifications for I2I, V2I and V2V communication in co-operative systems, one stakeholder representing the industry called for more bottom-up approaches. This especially called for well managed standardisation processes to ensure that all opinions, needs and constraints were duly taken into account.

The implementation strategy of Action 4.2, on the development and evaluation of cooperative systems in view of the definition of a harmonised approach, was deemed highly appropriate by the stakeholders because it was strongly oriented towards business needs and results. It carefully assessed evaluations of cooperative systems and the identification of business cases before supporting deployment strategies. The approach of Action 4.2 received a positive feedback from survey respondents.

The same assessment can be made for Action 4.1, on the adoption of an open in-vehicle platform architecture. The action relied on studies as a first step in order to set the baseline and identify potential business cases. Action 4.1, however, lacked an overall strategy and realistic targets towards achievement, while the challenge was big (which might explain the hesitations and delays). For this reason, the design of Action 4.1 was assessed as rather not appropriate.

Successes/positive elements

In general terms, the main successes/positive elements with respect to the implementation of Action Area 4 in terms of overall project management and quality of deliverables were:

- The choice of instruments and implementation strategies of the actions in Action Area 4 were overall assessed as highly appropriate. Three actions were assessed as highly appropriate in this regard (Actions 4.2, 4.3 and 4.4), while one was assessed as rather not appropriate (Actions 4.1).
- The good complementary between Actions 4.2, 4.3 and 4.4 should be noted. Action 4.2 assessed the feasibility of a deployment strategy for cooperative systems, while Actions 4.3 and 4.4 ensured interoperability through standards and specifications.

⁶⁵ Study on the regulatory situation in the member states regarding brought-in (i.e. nomadic) devices and their use in vehicles (SMART 2009/0065), Final Report

- Planned and actual stakeholder involvement was high overall for three of the four actions (please refer to Section 4.2.2).
- The quality of the intermediary and/or final outputs was assessed to be highly satisfactory for Action 4.2 and rather satisfactory for Action 4.3.

Difficulties/issues

The main difficulties/issues with respect to the implementation of Action Area 4 were:

- The large number and wide range of stakeholders caused difficulties in terms of commitment, participation and inclusion, adding complexity to the work that needs to be carried out.
- In the context of Action 4.4, limited performance of dissemination activities and general awareness of the action was found.

More specifically, the main difficulties/issues with respect to the implementation of Action 4.1 so far were:

- The action was severely delayed with no updated planned date of completion.
- The interviews with stakeholders showed that the level of awareness about the progress made was low. Moreover, according to the European Commission, the stakeholders have yet to really participate in the work, mainly due to slow progress and, according to the external stakeholders interviewed, a general lack of interest from stakeholders in the area.
- For some interviewees, the quality of some parts of the study⁶⁶ was deemed to be relatively poor, however, as a whole, the study, was assessed to be of acceptable quality.
- Besides the presentation conducted at the 2010 ITS conference, limited dissemination activities were found.

Action Area 5, Data security and protection, and liability issues

Design and implementation strategy

Both actions relied on a baseline study, with the aim to identify and evaluate potential measures and recommendations for further initiatives. In Action 5.1, the study described the state-of-the-art aspects concerning personal data protection in handling data in ITS applications and services in Europe. In Action 5.2, the study identified ITS applications with liability constraints that could result in claims and assessed the importance and impact of their liability issues.

There was no comprehensive study available on these issues, and for this reason stakeholders believed that baseline studies were the appropriate first step before taking any further initiatives.

However, all interviewees agreed that studies were not sufficient and that it was necessary to follow up the recommendations. More concrete steps were needed to really address needs. In particular, it was mentioned that data security and protection issues, as well as liability issues, could have been brought into the mainstream of all actions of the Action Plan. It is worth considering the option of preparing a future work programme for further action in this area upon completion of the studies.

⁶⁶ Study on an open in-vehicle platform architecture, 20 December 2010

Successes/positive elements

The overall design of Actions 5.1 and 5.2 were assessed as rather appropriate.

The two actions were in advanced stages of implementation, although they suffered delays.

For Action 5.1, the study and workshop provided stakeholders and the European Commission with relevant information and knowledge, and increased the understanding and awareness of the issue. The quality of the activities and outputs was regarded as high.

In the case of Action 5.2, one of the stakeholders interviewed considered that the workshop organised was of good quality and took place in a good setting.

Difficulties/issues

Generally, in Action Area 5, the implementation difficulties encountered were:

- Both actions were behind schedule.
- The participation and engagement of stakeholders on the topic and overall contribution to knowledge sharing was below expectations.
- Interestingly, based on the individual analysis of all actions, even though both actions were assessed as implemented with a high degree of planned stakeholder engagement and although some dissemination activities were conducted to share the results with the community, the results of the survey show that both actions were generally less known by the stakeholder community.⁶⁷ The reasons for this relatively poor result could be explained by the fact that none of the deliverables were available on DG MOVE's website and by a (surprising) general lack of interest by the community in the topics, as illustrated in the disappointing levels of actual participation.

Specifically, the main difficulties/issues with respect to the implementation of Action 5.2 so far were:

- Poor quality of the first versions of the intermediate deliverables.⁶⁸
- The findings on the state of the art report⁶⁹ were unstructured and contained elements not directly applicable to ITS.
- The implementation of this action was behind schedule as a result of these difficulties.
- Dissemination activities⁷⁰ were conducted before the external contractors re-submitted new versions of the intermediate deliverables, not allowing for a dissemination of updated results of acceptable quality.

In relation to Action 5.2, the assessment during interviews on the quality of the reports by European Commission staff and external stakeholders was based on the first versions of the reports. The Commission took steps to address the shortcomings and the reports were re-submitted by the external contractors in the course of November/December 2012. However, the timing of delivery precluded this evaluation from assessing the quality of the re-submitted versions.

⁶⁷ Only 21.1% and 27.6% of the survey respondents answered that they have participated or been following the progress of Action 5.1 and 5.2 respectively, which is in the lower range of results

⁶⁸ Intermediate Report 2: Identification of liability sensitive ITS applications (Planned for June 2012 – first draft: 3 September 2012)

⁶⁹ Intermediate Report 1: Report on the State of the Art, (first draft: 20 April 2012)

⁷⁰ Workshop linked to the Action Plan on Intelligent Transport Systems "Liability aspects related to ITS applications" of 13 June 2012 and the Commission ITS Conference of 22 October 2012 held in Vienna

Action Area 6, European ITS cooperation and coordination

Design and implementation strategy

Actions 6.2 and 6.3 aimed to provide decision-makers with tools to support evidence-based policy making and funding, but they both fell short of an overall strategy to address the issue of the lack of understanding of ITS and ITS benefits by policy makers:

- Action 6.3, on the development of guidelines for the public funding of ITS facilities and services, acknowledged that a baseline study on funding practices (including project evaluation) was the appropriate step to start with. However, the implementation plan did include the follow up of recommendations with practical and longer-term solutions.
- Action 6.2 was highly complementary to Action 6.3 in that it aimed to provide policy-makers with evidence on the success and impact of the deployment of ITS solutions in road transport in order to support evidence-based policy making. However, it did not take into account a precondition for the tool to be effective- evaluation practices in the Member States were not sufficiently developed for data to be available for the tool. Moreover, the implementation plan of the action has yet to envision a regular update of the tool, while evaluation practices will (hopefully) develop.

The choice of instruments for implementation of Action 6.1, on the legal framework for European coordination on EU-wide deployment of ITS, was assessed as highly appropriate by all stakeholders in the sense that it provided a clear mandate to the European Commission to steer the harmonisation process through a bottom-up approach. The choice of standards and, especially, specifications, was acknowledged as appropriate by stakeholders across all actions of the Action Plan.

Action 6.4, building upon a participatory design through an expert group with a clear agenda, was the correct approach to generate dialogue and cooperation. The bottom-up approach in an area where the EU has limited competency due to the principle of subsidiarity was appropriate to start with so as to generate dialogue, cooperation and interest. A more proactive, top-down approach might however be needed in the future to move things forward.

Successes/positive elements

In general terms, the main successes/positive elements with respect to the implementation of Action Area 6 in terms of overall project management and quality of deliverables were:

- Three of the four actions were completed within schedule, while the fourth action (Action 6.3) was suspended voluntarily after the completion, on schedule, of the first phase.
- Planned involvement and actual stakeholder participation was high overall for all actions (please refer to Section 4.2.2).
- The quality of the intermediary and/or final outputs was assessed to be highly satisfactory for two actions (e.g. Actions 6.1, and 6.4) and rather satisfactory for the remaining two actions (e.g. Actions 6.2 and 6.3).
- Two of the four actions (Actions 6.1, and 6.4) of this Action Area contributed to a large extent to raising awareness on the barriers of deployment of ITS in Europe (please refer to section 5).

More specifically, for Action 6.1, the main success factors were represented by the increased awareness. The impact assessment that accompanied the proposal researched and disseminated the most important barriers to deployment of ITS, and the Directive's implementation underwent the European law-making process and greatly contributed to raising awareness of the political actors on the benefits of ITS. It also contributed toward the creation of a formal ITS framework in which stakeholders can collaborate and work together towards common targets.

The toolkit developed under Action 6.2 was of sufficient quality and able to perform the intended functions.

The study conducted under phase one of Action 6.3 provided new and interesting baseline information on ITS funding in Member States.

Action 6.4 benefited from a strong and good support and management from the European Commission. The activities of the action were planned in advance and the schedule was realistic, the objectives were reached on time, and the deliverables of the expert group were regarded as good quality. The European Commission was praised for good coordination and management of the expert group, as well as for chairing the meetings and providing secretariat in support of the work undertaken by the expert group.

Difficulties/issues

There were no major issues in terms of implementation of this Action Area.

Minor difficulties/issues with respect to the implementation of individual actions within this Action Area so far were:

- With respect to the overall process of developing specifications under the ITS Directive (Action 6.1), there was some frustration with the stakeholder community due to the perceived insufficient engagement in the process.
- The European Commission took few steps to disseminate or promote the toolkit developed under Action 6.2.
- Inputs for the final output of Action 6.2 depended on the pre-existence of an evaluation culture in the EU in terms of ITS investment, a precondition still not met and thereby leading to a decreased effectiveness.⁷¹
- Due to the complexity of the issues tackled in Action 6.4, the guidelines were quite voluminous and therefore could be criticised by stakeholders.

⁷¹ This, however, is not a problem related to implementation per se, but a question of readiness of the environment for such an action.

4.3.3 Conclusion

Successes/positive elements

The main successes/positive elements mentioned by survey respondents and interviewees with respect to the implementation of the ITS Action Plan were: **good cooperation and involvement of the various stakeholders**, positive contribution of the ITS Directive and the ITS Action Plan toward **increasing awareness of ITS** and **structuring the role of the ITS Action Plan** as a roadmap. **The quality of the deliverables** and outputs was also assessed positively overall by the interviewees. Studies were said to provide **valuable baseline information** and recommendations. These conclusions were consistent with the results of the in-depth analysis of individual actions performed in this evaluation.

The overall design for implementation of the actions was appropriate; the European Commission's role as a coordinator, facilitator and moderator was appreciated by stakeholders.

The implementation of the Action Plan successfully took into account **parallel initiatives** and policies. As a result, **synergies and complementarities** were achieved while duplication of efforts was avoided.

Difficulties/issues

Apart from the large number of delayed actions, in terms of the timing set in the Action Plan, there was not a major recurring issue concerning the implementation of the actions, and **obstacles tended to be specific to each action**. This by itself can be interpreted as a positive sign. In general, not all interviewees were aware that the actions were actually delayed compared to the initial targets.

With respect to overall management, a number of ongoing actions lacked a precise planned date of completion, and it was not planned for the majority of actions to produce intermediary outputs and/or milestones. For some of the actions that experienced delays, there was no updated planned date of completion.

The planning and overall management of actions was assisted by a number of managerial tools, such as action fiches for each action and an overall monitoring tool. However, this evaluation found that these **tools were not actively used and insufficiently updated**.

A number of actions had objectives that were either open-ended or open to interpretation. As a result, the **final output of the actions was unclear**, making it difficult for stakeholders to develop a clear position on the action and creating difficulties with respect to implementation in terms of planning and timing

A few actions experienced difficulties in actively involving stakeholders, which can be deemed as sufficient to an extent.

5. EFFECTIVENESS

5.1 Contribution to awareness raising of ITS in Europe

This section addresses the following evaluation question:

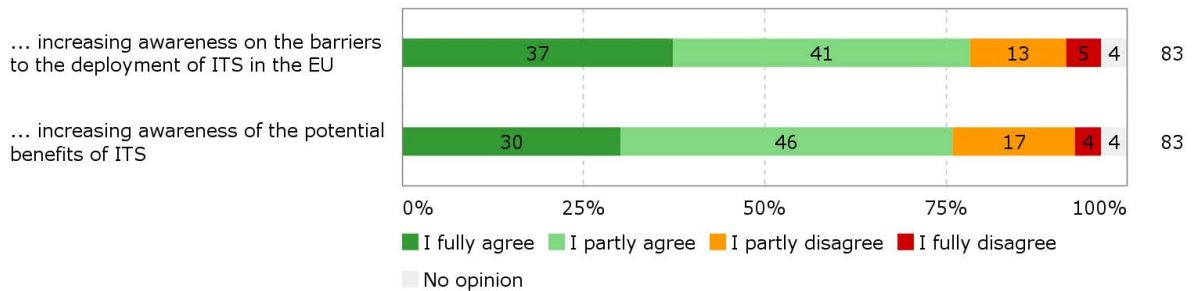
- **EQ6: To what extent has the adoption and implementation of the ITS Action Plan raised awareness on the barriers to the deployment of ITS in Europe?**

The sources of evidence included the full set of data: online survey and interviews at the Action Plan level, as well as aggregate findings resulting from the analysis of all actions (interviews, survey and desk research at the action level).

5.1.1 Action Plan level

In the survey, respondents were asked to assess different aspects of awareness raising:

Figure 16, To what extent is the Action Plan contributing to...



The stakeholder assessment on the contribution of the ITS Action Plan to awareness raising was overwhelmingly high. Almost 80% of respondents either fully (37%) or partially (41%) agreed with the statement that the Action Plan has contributed to raising awareness on the barriers to the deployment of ITS in the EU. Also, more than 75% of respondents fully (30%) or partially (46%) agreed with the statement that the Action Plan increased awareness of the potential benefits of ITS.

When asked about successes and positive elements of the implementation of the ITS Action Plan, survey respondents spontaneously mentioned increased awareness (seven respondents mentioned that, which was one of the four most recurring items).

Interviews with stakeholders⁷² indicated that the ITS community almost unanimously agreed on the fact that the Action Plan contributed to raising overall awareness of ITS in Europe (both on

⁷² 22 interviewees agreed to answer the general questions that related to the Action Plan overall

the potential benefits as well as on the barriers to implementation). In their view, this was because a wide range of parties were involved and shared views and knowledge, which contributed the most to raising awareness.

Importantly, stakeholders considered that the Action Plan has also contributed to raising political awareness and knowledge. In this respect, interviewees considered the Directive to have been a great step forward by bringing together Member States and a wide variety of stakeholders. The impact of the Action Plan and the Directive in this regard cannot be differentiated, although it seems that the Directive was more visible. It should also be noted that many stakeholders believed that more needs to be done to increase awareness among policy makers, as there is still a lack of willingness to invest in ITS solutions.

Similar comments were made with regard to EasyWay, which has also been an enabler to raising awareness on the obstacles to ITS deployment, along with the Action Plan and the Directive.

No interviewee stated that the Action Plan did not have any effect on raising awareness of ITS. Very few (2) interviewees with reservations regarding this question considered that it might be too early to make a statement regarding any kind of effect of the Action Plan.

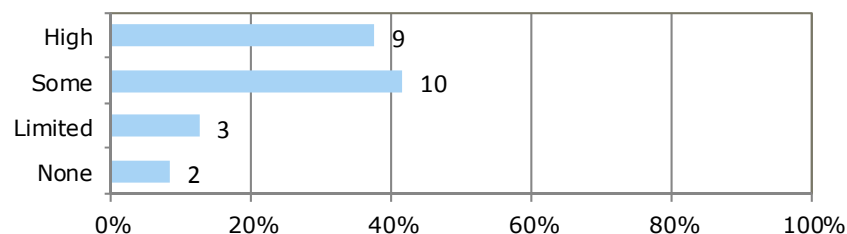
The analysis of Actions: The analysis of individual actions allowed for a more in-depth assessment of the contribution of the actions to raising awareness. As detailed in other sections of this report, the analysis of individual actions collected evidence from different sources (desk research, interviews with stakeholders and Commission staff, etc.) and helped provide answers to EQ2 on the extent to which the ITS Action Plan is known and its progress followed/reported among the ITS stakeholder community (see section 0).

In this context and in order to conclude on whether the actions in the Action Plan had a contribution to raising awareness on the barriers/potential benefits of ITS in Europe, the following contribution chain is assumed and subsequently verified.

If an action with the potential to raise awareness on the barriers/potential benefits of ITS in Europe was implemented with a high degree of stakeholder participation **and** the deliverables (intermediary or final) were disseminated to a sufficient extent **then** it is reasonable to assume that the action would have had a contribution to raising awareness on the barriers/potential benefits of ITS in Europe.

On the basis of the assumption presented above, the aggregate results show that a majority of actions (19) had at least some contribution to raising awareness, while another five also showed to have had some, albeit limited, contribution, and only two actions had no contribution at all.

Figure 17, Contribution of actions to raising awareness (on the barriers to the deployment of ITS in Europe and/or the benefits of the deployment of ITS in Europe)



In general, the actions assessed to have had a high contribution to awareness raising enjoyed a high degree of stakeholder participation, were strongly promoted and had their deliverables amply disseminated. In general, the actions with a high contribution also involved coordination and cooperation between active stakeholders.

Among the actions with a high contribution to raising the awareness on the barriers/potential benefits of ITS a few stand out:

- Some actions reached out to stakeholders normally outside the “usual” actors operating in a specific topic. For example, Actions 1.1 and 6.1 had a significant contribution to raising the awareness among policy makers while Actions 1.5 and 3.2 reached out to the wider public to raise awareness of the potential barriers to deployment of ITS.
- The implementation of some actions provided a good platform for exchanging views and understanding difficulties on the deployment (e.g. Actions 2.4, 3.1).
- Some actions had a contribution in assessing and demonstrating the potential of ITS to contribute to specific socio-economic impacts (e.g. Action 3.4 helped demonstrate the potential of ITS applications to increase safety for vulnerable road users while the field operational tests contributed to assessing and demonstrating the effectiveness of cooperative systems in the context of Action 4.2).

The actions assessed to have had a limited contribution were assessed as such because they were either at an early stage (Action 4.1), they reached very few people outside the “usual” actors involved (Action 4.4) or the action was put on hold following a good but insufficient intermediate deliverable (Action 6.3).

The actions with no contribution to raising awareness were actions that had not been implemented (Action 2.1 and Action 2.3).

5.1.2 Action Area level

Action Area 1 – Optimal use of road traffic and travel data,

The actions of Action Area 1 all had at least some contribution to increasing awareness of ITS in Europe. Two actions (1.1 and 1.5) had a high contribution. The relatively high contribution of this Action Area to raising awareness can be partly explained by the close connection of the area to priority actions (a), (b) and (c) of the Directive, and the ability of the actions to reach out beyond the “usual” actors normally involved in the topic.

In addition to the link between this Action Area and the implementation of the Directive, stakeholder involvement, participation and dissemination were all assessed as relatively high for Action Area 1 (see section 4.2.2).

Specifically, within this area Action 1.5 had a particularly strong contribution to raising awareness on the feasibility and potential of developing and promoting multimodal door-to-door journey planners. The reach of the action extended and was widely promoted across the stakeholder community and beyond into the political sphere and the end-users.

Action Area 2 - Continuity of traffic and freight management

Overall the relative contribution of Action Area 2 to raising awareness of ITS in Europe was seen to be generally low.

Out of four actions only one (Action 2.4) was assessed to have had a high contribution to raising awareness. Because two of the actions (Actions 2.1 and 2.3) have not been implemented, the assessment of their effectiveness was not applicable. In the case of Action 2.2, the pre-conditions for such an effect to occur existed (high participation of stakeholders in the implementation of the action and some numerous dissemination activities of intermediary deliverables took place).

The high contribution of Action 2.4 to raising awareness was supported by the fact that the action provided a good platform for exchanging and understanding difficulties on the deployment of the European Electronic Toll Service (EETS).

Action Area 3, Road safety and security,

Action Area 3 also had a high contribution to raising overall awareness of ITS in Europe.

All actions of this Action Area had at least some contribution to raising awareness, and the contribution of three of them was assessed as high (i.e. Actions 3.1, 3.2, and 3.4).

Similar to Action Area 1, generally speaking, the reasons for the success of Action Area 3 to raising awareness was due to the overall high level of stakeholder participation and the high degree with which intermediary and final outputs were disseminated (see section 4.2.2 for details).

More specifically, the specific objective of Action 3.1 was to promote safety-related ITS, such as advanced driver assistance systems and safety and security-related ITS systems, and the implementation of this action was found to be highly successful (see section 4.1.2).

Action 3.2 included an extensive awareness raising campaign that was implemented well and assessed by interviewees to have been a real success. Moreover, awareness of this action extended out of the EU, a statement supported by the fact that countries outside the EU joined the pledge to implement eCall (e.g. Croatia, Iceland, Norway and Switzerland, and there are also ongoing cooperation with the Russian Federation).

As part of Action 3.4, the FP7 research call⁷³ and subsequent projects contributed to raising awareness of the potential of ITS to increase safety for vulnerable road users.

Even Action 3.3, which is currently suspended, had some effect to raising awareness on the barriers of deployment of ITS by shedding some light on the complexity and diversity of regulatory frameworks in different countries through the study conducted.⁷⁴

Action Area 4, Integration of the vehicle into the transport infrastructure

Action Area 4 was assessed to have a relatively limited contribution to raising awareness on the barriers/potential of ITS in Europe.

As explained in section 4.1.2 in more detail, the implementation of this Action Area was in its early stages and it is understandable that the effects of individual actions with respect to raising awareness were limited, especially for case for Action 4.1.

On the positive side, Action 4.2 was found to have some contribution to raising awareness of the benefits of ITS through the field operational tests that contributed to assessing and demonstrating the effectiveness of cooperative systems. No evidence of the contribution of Action 4.3 to raising overall awareness can be cited; however, the pre-conditions for such an effect to occur exist, so such effects are expected to take place in the short term. The action was implemented with a high level of planned and actual stakeholder participation, and the extent of dissemination activities was assessed to be high. Moreover, the current awareness among stakeholders of this was found to be high, which is a good indicator of the effectiveness of dissemination activities and overall engagement of stakeholders in the action.

An interesting finding of this evaluation, as indicated by the survey results and the assessment of key stakeholders interviewed, was that Action 4.4 and the overall topic were relatively less known by stakeholders and the ITS Community. This is an early indication of a likely low contribution to raising awareness.

⁷³ SST.2012.4.1-4. Impacts of Intelligent Transport Systems on vulnerable road users

⁷⁴ Study on the regulatory situation in the member states regarding brought-in (i.e. nomadic) devices and their use in vehicles (SMART 2009/0065), Final Report

Action Area 5, Data security and protection, and liability issues

Data protection and liability issues were widely known and recognised by the ITS stakeholder community as obstacles to wide and efficient deployment of ITS. In this context, the actions within this Action Area aimed to foster deployment of ITS by making it easier for actors to comply with existing legislation in the field of data protection and liability.

This evaluation found that this Action Area had some effect in raising awareness on the barriers to deployment of ITS in Europe, in a context in which the main barriers were already known to stakeholders.

Action Area 6, European ITS cooperation and coordination

Overall Action Area 6 had a very high contribution to raising awareness on the barriers and to the potential benefits of ITS in Europe. However, this contribution strongly attributed to Action 6.1, to some extent to Action 6.4 and to a much lower extent to Actions 6.2 and 6.3.

Action 6.1 was assessed to have had the highest effect in raising awareness (both on the barriers, as well as on the potential benefits) of ITS in Europe, mainly by involving a large number stakeholders and creating a framework for coordination and cooperation of efforts. The same mechanism (the creation of a cooperation platform and the involvement of a large and wide scope of stakeholders) was also cited as a reason for the high contribution to raising awareness of Action 6.4.

Action 6.2 had a limited effect due to the limited use and uptake.⁰ However, the implementation of the action raised awareness on a less known barrier to deployment of ITS in Europe, which was the lack of evaluation culture in Europe when implementing ITS solutions.

Action 6.3 had a limited effect due to the fact that it was suspended. However, at the time of the study⁷⁵ implementation and dissemination, the action contributed to increasing awareness on funding issues.

⁷⁵ Study regarding guidelines for public funding of Intelligent Transport Systems - Final Report, Logica - 25 May 2011, TREN/G4/FV-2008/475/02

5.1.3 Conclusion

Overall, it is clear that one of the major contributions of the Action Plan was to bring ITS to the table, generate debates and discussions, and share knowledge within the stakeholder community. Due to involvement of different parties, many views and existing barriers to ITS deployment could be discussed and shared.

Stakeholders were of the opinion that the Action Plan contributed to involving to a larger extent the political spectrum, although more efforts are needed in this area.

In this respect, all interviewees agreed that the ITS Action Plan, along with other initiatives such as Easyway and the implementation of the Directive, contributed greatly to increased awareness of the barriers to deployment of ITS and its potential benefits.

When going down to the action level, however, the picture was less homogeneous.

Most of the actions involved stakeholder and dissemination activities, and in this regard contributed to a high or to some extent to raising awareness among the stakeholder community and, very importantly, beyond the "usual" actors normally involved in the topics.

One striking examples was Action 3.2, which included an awareness raising campaign on e-Call. Another good example was Action 3.4, where stakeholder were highly involved in the FP7 Call for proposals in the area of vulnerable road users.

Actions assessed not to have had a significant impact on raising awareness on the barriers/benefits of ITS were mainly those that were not yet well advanced. Some actions found difficulties in involving the broader stakeholder community, and in this respect failed to increase interest of the stakeholders in the relevant issues (e.g. Action 4.4).

5.2 Contribution to ITS deployment and socio-economic impacts

This section addresses the following evaluation question:

- **EQ7: To what extent have the actions undertaken so far contributed to achieve the objectives of the ITS Action Plan?**

It also contributes to answer to the following question (see also sections 8.1 and 8.2):

- **EQ8: To what extent should/could new or upgraded actions be envisaged to complement the work achieved so far?**

In order to answer this question, the underlying intervention logic of the ITS Action Plan was drawn in section 2.1.1 of this report. It contains a set of the operational (action level), specific (Action Area level), global objectives (impact on increased deployment of ITS) and socio-economic impacts of the Action Plan as understood by the Evaluator and based on the objectives presented in the ITS Action Plan and impact assessment.⁷⁶

⁷⁶ COM(2008) 887 final, Communication from the Commission, Action Plan for the Deployment of Intelligent Transport Systems in Europe, Brussels, 16.12.2008; Impact Assessment, SEC(2008) 3083, Commission Staff Working Document Accompanying document to the Action Plan for the Deployment of Intelligent Transport Systems in Europe and the Proposal

For the purpose of answering this evaluation question, the following indicators were assessed:

- degree of achievement of the action's **operational objectives**;
- evidence of **follow up** of the results of the actions;
- evidence of **uptake** of the results of the actions;
- evidence of contribution to **enhanced deployment of ITS in Europe** (overall objective);
- evidence of contribution to **cleaner, safer, more competitive and more efficient transport** in Europe (socio-economic objective);
- **sustainability** of the results achieved so far.

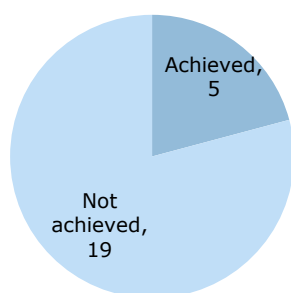
The sources of evidence included the full set of data: survey and interviews at the Action Plan level, as well as aggregate findings resulting from the analysis of all actions (interviews, survey and desk research at the action level).

5.2.1 Action Plan level *Achievement of the operational objectives*

The analysis of Actions has already enabled the assessment of the progress status of the actions. This analysis relied mainly on the European Commission's assessment based on stated plans (see section 4.1). For assessing effectiveness at the operational level, a different approach was taken by the evaluator. Based on triangulated sources, including stakeholders' views, the evaluator assessed whether the operational objective of an action, *as formulated in the Action Plan*, was met or not. One element taken into account in this assessment was whether further work is needed to achieve the objective (for recommendations, see section 7).⁷⁷

The use of this indicator was an attempt to think beyond the European Commission's stated intentions and implementation aspects, and to focus on effectiveness in terms of the degree of achievement of the action's objectives as initially planned in the Action Plan. As will be seen below, this approach did not add much information to the analysis of the progress status.

Figure 18, Degree of achievement of the action's operational objective



As can be seen in Figure 18, a large majority of actions have not achieved their objective yet. In five actions the objective was considered fully achieved. This concerns Actions 1.5, 4.4, 6.2, 6.3 and 6.4. Generally the result was consistent with the analysis of the progress status presented in Figure 5. The actions considered completed by the European Commission met their operational objective (hence are duly deemed completed). A few discrepancies are presented below.

for a DIRECTIVE laying down the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other transport modes, Brussels, 16.12.2008

⁷⁷ It should be noted that this assessment does not consider dissemination, although dissemination is clearly a prerequisite for the uptake of results.

Discrepancies with the progress status analysis are few:

- Action 4.4, on the definition of a mandate for the European Standardisation Organisations: the action was considered on-going from a European Commission perspective, since work was still being implemented. For the evaluator, looking strictly as how the objective is formulated in the Action Plan, this objective can be considered as partly or fully achieved, depending on the interpretation given to the wording of the objective.⁷⁸
- Action 6.2, on the development of a decision-support toolkit for investment decisions in ITS applications and services: the European Commission considered that there could be more work done to finalise the toolkit, but the toolkit was already operational and used online, and there was no guarantee that the contractor would address the last comments from the European Commission. However, the fact that the objective was considered met by the evaluator does not guarantee this toolkit will be used for actual decision making in Europe due to a number of reasons (lack of data, no plan for maintenance).
- Action 1.2, on the definition of specifications for data and procedures for the free provision of minimum universal traffic information services: The action's objective was assessed as not achieved, while its status was completed according to the European Commission. A study was conducted and recommendations were issued. However, in the assessment of the stakeholders interviewed, there was need for follow-up action in order to make the results of the action effective.

In the scope of Action 3.1, on the promotion of deployment of advanced driver assistance systems and safety and security-related ITS systems, Regulation (EC) No 661/2009 for the type-approval of motor vehicles with regard to the installation advanced driver assistance systems in heavy-duty vehicles was adopted. While this was not a true contribution of the Action Plan (the Regulation was under preparation when the Action Plan was launched), it was a great contribution to the objective of the action, which can be deemed partly met.

In the survey, respondents who answered specific questions on selected actions⁷⁹ were asked whether they consider that the objective of the action(s) was met (or expected to be met shortly). Overall, answers were consistent with the assessment made above.⁸⁰

Follow up

In the analysis of Actions, evidence of follow-up and up-take was collected at the action level:

- "yes" means that follow-up was already taking place or uptake had already occurred;
- "expected" means that the European Commission or stakeholders were considering follow-up activities or use of results, and the intention was declared or discussions were on-going;
- "no" means that no evidence follow-up or uptake could be identified;
- "don't know" applies when there was some indications of use of the actions' outputs in ITS development or deployment activities, but it was not clear whether this could be attributable to the Action Plan.

⁷⁸ Mandate M/453 has been defined and work by the standardisation organisations is still on-going, As technology and scope of the action widens, so may the objective may be interpreted as open-ended.

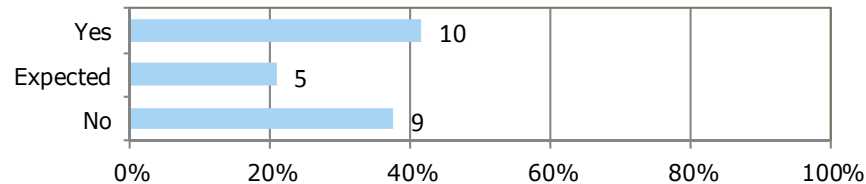
⁷⁹ The representativeness and number of respondents which answered specific questions on selected actions is further detailed in the individual action sheets prepared as part of data collection for this report.

⁸⁰ The survey results at the level of the Actions are available in annex to the report. They are also analysed in the Action Sheets.

In this evaluation, *follow-up* is defined as new initiative(s) for supporting the deployment of ITS taken by the European Commission or external stakeholders as a result (or in the continuity) of an action. Follow-up could occur even if an action was on-going and its objective not yet met.

Figure 19, below, presents the result of the analysis.

Figure 19, Follow up activities at EU and/or national levels



Follow-up activities were observed in ten actions. They included, for instance, the development of specifications under the ITS Directive (e.g. Actions 1.1, 6.1), follow-up work conducted by the iMobility forum (Actions 1.3, 3.4),⁸¹ AETIS (Action 2.4),⁸² eMaps (Action 1.3), Easyway (Action 2.1), or continuity in long-term actions (Actions 2.2 – eFreight and Action 3.2 (eCall).

Follow-up activities were expected in five actions. This included, for instance, likely follow-up of study recommendations by the European Commission (Actions 1.2, 5.1) and the continuation of the work announced by Ertico (Action 6.4).

Out of the five actions with an operational objective said to be achieved, only one action was not followed up: Action 6.2, for which there was no plan to maintain or promote the decision support toolkit.

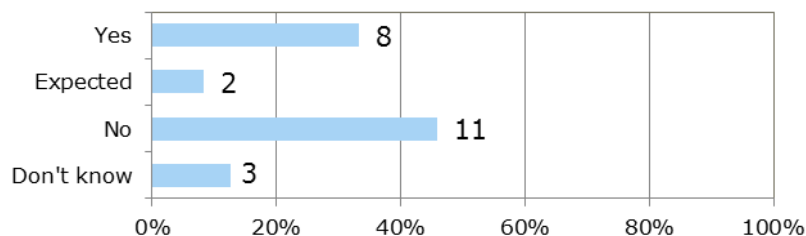
With the exception of the latter case, these were reasonably good results, in view of the progress status of the implementation of the Action Plan.

Uptake

In this evaluation, *uptake* is defined as the use of the output of the actions by stakeholders in their deployment activities.

Figure 20, below, presents the result of the analysis.

Figure 20, Uptake of results at EU and/or national levels



⁸¹ The iMobility Working Group on Vulnerable Users is a follow-up initiative taken by stakeholders. The VRU WG aims at creating a forum encompassing stakeholders in the area of Vulnerable Road Users safety enhancement, and at supporting a similar objective as the action 3.4 of the Action Plan. In this regard, the WG is willing to be involved in the further elaboration and application of appropriate measures for VRU

⁸² Around 10 companies, potential EETS providers, have created an association for Electronic Tolling and Interoperable Services (AETIS). AETIS gathers interest groups and stakeholders in the process of setting up and maintaining EETS.

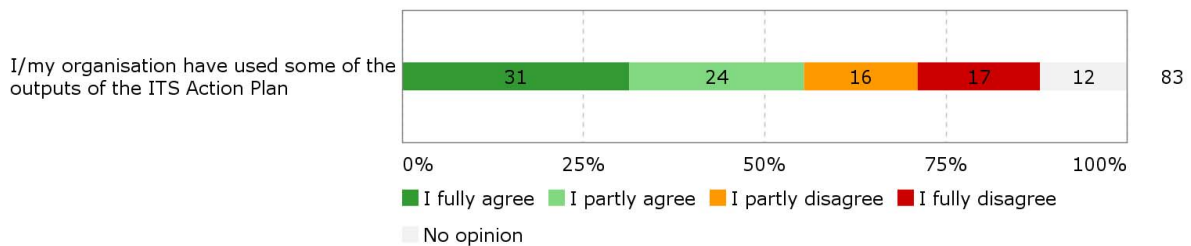
The results (final or intermediary) of eight actions experienced uptake. This included some of the actions mentioned above, where the work conducted under the Action Plan was used in follow-up activities. This also included actions in Action Areas 1 and 4, for which the on-going work for the definition of specifications was already being taken into account by the industry.

Out of the five actions with an operational objective said to be achieved, in the scope of Action 1.5 national multi-modal journey planners were being developed and expected to be placed on the market, but the causal link with the action could not be established. Some of the standards being developed as a result of Action 4.4 were already being used by industry. The uptake of specifications drafted under the ITS Directive (Action 6.1) were expected. Action 6.2 did not have any uptake yet. In the case of Action 6.4, achievement of the operational objective related to the set-up of the coordination platform was achieved, while uptake necessarily takes into account the deliverables of the coordination platform. As the final deliverables of the coordination platform were not yet published at the time of data collection for this report, no assessment of uptake could be made.

The scope and content of the uptake of specific actions is detailed further in the sections dealing with each individual area below.

In the general part of the survey, respondents were asked to what extent they have used some of the outputs of the ITS Action Plan.

Figure 21, To what extent do you agree with the following statement on the use of the ITS Action Plan so far?



As seen in Figure 21, 55% of respondents agreed at least to some extent that their organisation used some of the outputs of the ITS Action Plan.

When analysing the responses with regard to the area of activity of the organisation where the respondent works or represents, the highest results were received from: research organisations (75%),⁸³ transport operators (70%),⁸⁴ Member State administration, (63%)⁸⁵ and the automotive industry (60%).⁸⁶

The least positive results were received from NGOs (33%),⁸⁷ users associations (40%),⁸⁸ equipment manufacturers (42%),⁸⁹ and the telecommunication industry and regional/local administration (49%).⁹⁰

Moreover, in the part of the survey dedicated to each action, respondents who answered specific questions on selected actions were asked whether the output of an action(s) was useful (or expected to be useful) to them or their organisation. For 19 actions, half of the respondents responded positively.

⁸³ Total number of respondents: 12

⁸⁴ Total number of respondents: 7

⁸⁵ Total number of respondents: 19

⁸⁶ Total number of respondents: 5

⁸⁷ Total number of respondents: 3

⁸⁸ Total number of respondents: 5

⁸⁹ Total number of respondents: 7

⁹⁰ Total number of respondents: 6 and 12, respectively

Taking into account the progress status of the implementation of the Action Plan, these are good results overall, as there are more instances of uptake than completed actions.

Contribution to enhanced deployment of ITS in Europe

As mentioned in the introduction of this section, the impact assessment⁹¹ for the ITS Action Plan and the ITS Directive presented the following general objective of the initiative: to create the conditions and, in particular, to put in place the necessary mechanisms to foster the uptake of ITS services and applications for road transport and their interconnections with other modes of transport in order to have ITS contributing at its full potential towards the various EU policies.

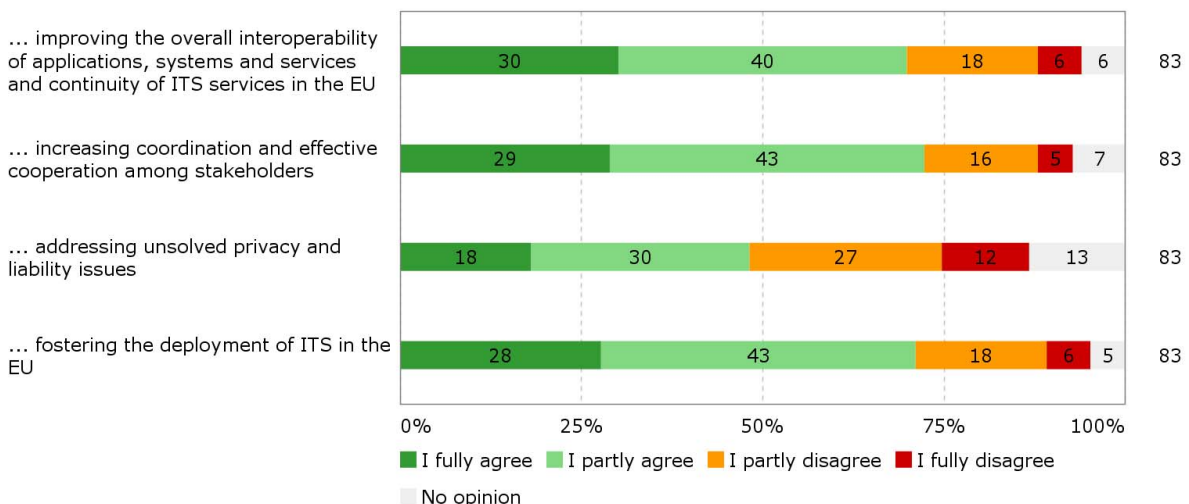
The specific objectives related with this general objective include:

- to increase **interoperability** by standardisation of basic components, ensuring seamless access and fostering an open European ITS market based on continuity of services;
- to set up an **efficient concertation/cooperation mechanism between all ITS stakeholders** in order to provide a clear vision on how ITS should be deployed on a Europe-wide scale and how it should support implementation of EU policies in the field of sustainable development, competitiveness and growth and to limit or even avoid the negative effects of inappropriate deployment or use of ITS;
- to **solve privacy and liability issues** related to the provision and sharing of data, and to the deployment of novel safety-enhancing applications and value-adding services.

Therefore, the specific objectives presented above are the mechanisms through which the Action Plan was planned to put in place the necessary mechanisms to foster the uptake of ITS services and applications for road transport and their interconnections with other modes of transport in order to enhance deployment of ITS in Europe.

In the survey, respondents were asked if they consider that the Action Plan has contributed to any of these specific objectives.

Figure 22, To what extent is the Action Plan contributing to...



As presented in Figure 22, 72% of respondents in the survey fully (29%) or partially (43%) agreed with the statement that the Action Plan contributed to increasing coordination and effective cooperation among stakeholders. This can most probably be attributed to a number of specific actions (e.g. Action 6.1, on the ITS Directive, or Action 6.4, which contributed to

⁹¹ SEC(2008) 3083, Commission Staff Working Document, Impact Assessment , Brussels, 16.12.2008, Section 4.1, page 27

establish a coordination platform that is now examining possibilities to establish itself in a sustainable way). In addition, coordination and cooperation were not necessarily explicit objectives in all actions, but all actions can potentially contribute to this objective through participatory/consultative approaches.

Similarly, 70 % of respondents fully (30%) or partially (40%) agreed with the statement that the Action Plan is improving the overall interoperability of applications, systems and services and continuity of ITS Services in the EU. This again is a positive assessment, consistent with the analysis of the follow-up and uptake, as well as with the progress made in Actions Areas 1 and 4, where specifications were being defined and the progress made closely followed, and already taken into account by the industry.

Only 48% of respondents fully (18%) or partially (30%) agreed with the statement that the Action Plan is addressing unsolved privacy and liability issues. Moreover, a number of comments made by respondents pointed towards the need to address unsolved privacy and liability issues with more precision and to promote solutions for identified issues. This was also consistent with the assessment of the uptake or results: both Action 5.1, on data protection and security, and Action 5.2, on liability issues, were in their final stage of implementation, but there was no indication of uptake and no plan for follow up on the baseline studies being conducted.

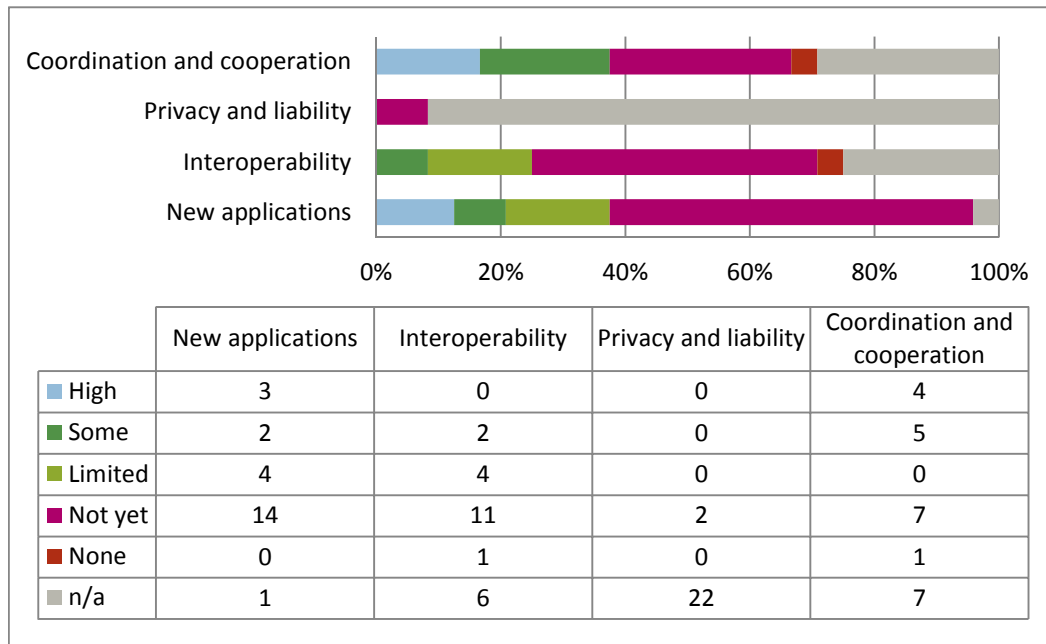
In the view of the survey respondents, however, the lack of contribution to addressing unsolved privacy and liability issues was not detrimental to the overall Action Plan's contribution to the deployment of ITS in the EU. As can be seen in Figure 22 above, 71% of respondents agreed either fully (28%) or partially (43%) with the statement that the Action Plan is fostering the deployment of ITS in the EU.

Overall, these results indicate that stakeholders value the Action Plan's contribution to address the main bottlenecks.

The analysis of Actions gives a deeper understanding and assessment of the contribution of the Action Plan to fostering ITS deployment. The methodology used for this assessment involved the collection and analysis of evidence for one of the following "types" of contribution to ITS deployment: new applications, improved interoperability, enhanced cooperation and coordination, and better privacy and liability.⁹² The results of this analysis are presented in Figure 23.

⁹² The choice of these four criteria reflects the reasoning detailed in the Impact Assessment which accompanied Action Plan and the proposal for the ITS Directive

Figure 23, Evidence of the contribution of the actions to ITS deployment



The following findings can be mentioned:

- Cooperation and coordination:* as indicated by the figure, the highest contribution of the ITS Action Plan to ITS deployment was identified in the area of cooperation and coordination. There was evidence that nine actions contributed to a high (e.g. Actions 1.3, 3.2, 6.1 and 6.4) or to some (e.g. Actions 1.1, 2.4, 3.1, 3.4, and 4.3) extent to cooperation and coordination so far. This was probably a conservative assessment, as more actions potentially had an effect in this respect through the considerable efforts of stakeholder involvement and participation and through the strong contribution of the Action Plan as a whole to increased awareness on the potential benefits of ITS outside the “usual” circles of ITS practitioners.
- Privacy and liability:* only two actions were expected to foster deployment of ITS by solving privacy and liability issues (Action Area 5) but no evidence of their contribution could be identified yet.
- Interoperability:* six actions contributed to some (e.g. Actions 1.5, 4.3) or to a limited extent (e.g. Actions 2.2, 2.4, 4.2, 4.4) to the interoperability of ITS services. The large majority of actions (11 actions) have not shown any evidence yet towards increasing interoperability of ITS services.
- New applications:* The figure shows that the Action Plan contributed so far to the development of new applications. There was some evidence that five actions contributed to a high (i.e. Actions 3.1, 3.2 and 3.4) or to some (i.e. Actions 1.5 and 4.3) extent to the development of new applications. Limited evidence of contribution to the development of new application was identified for four actions (i.e. Actions 2.2, 2.4, 4.2 and 6.2). The large majority of actions (14 actions) have not shown any evidence yet of fostering the development of new applications.

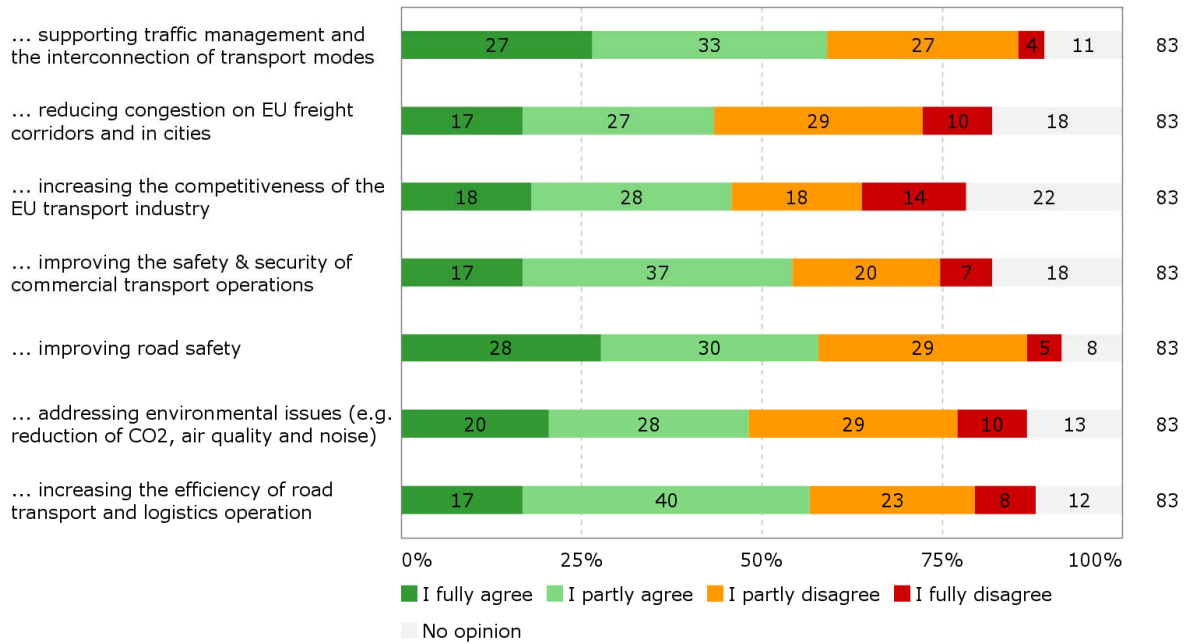
As a default rule, the contribution of an action to ITS deployment was considered to be "not yet" visible, and as to whether the action was expected to contribute to ITS deployment, such contribution was also not yet observed. In a sense, this is an indication of the “potential contribution” of the Action Plan to ITS deployment, in terms of new applications, interoperability, privacy and liability, and coordination and cooperation. This was to pay credit to the fact that it was too soon to expect large scale deployment.

Not all actions aimed at four types of contribution to ITS deployment. In this case, "not applicable" was indicated.

Contribution to cleaner, safer, more competitive and more efficient transport in Europe

In the survey, respondents were asked if they considered that the Action Plan contributed to any of the socio-economic objectives mentioned above.

Figure 24, The ITS Action Plan is contributing to...



With respect to the economic, social and environmental impacts of the ITS Action Plan, around 70% of the survey respondents assessed positively the Action Plan’s contribution to supporting traffic management and the interconnection of transport modes⁹³ and to improving road safety.⁹⁴

At the opposite spectrum, only 44% of respondents agreed with the statement that the Action Plan contributed to reducing congestion, while 46% and 48% agreed that the Action Plan contributed to increasing the competitiveness of the EU’s transport sector and to environmental issues (such as CO2, air quality and noise), respectively.

A significant percentage of respondents issued no opinion for some of the socio-economic impacts suggested. This result, in itself, indicates that a large number of respondents were not able to identify any evidence in support of or against the statements.

No significant discrepancies were identified when crossing the results with the profile of the respondents.

Although rather positive overall, these results indicate that the socio-economic impacts of the Action Plan were not obvious to the survey participants. Two explanations are plausible: either the respondents considered it too soon to observe such impacts, as large scale deployment as a consequence to the Action Plan remains to be seen, or the respondents considered that the causality link between the activities of the Action Plan and the specified socio-economic impacts was not demonstrated.

⁹³ 70% of respondents partially (33%) or fully (27%) agreed with the statement

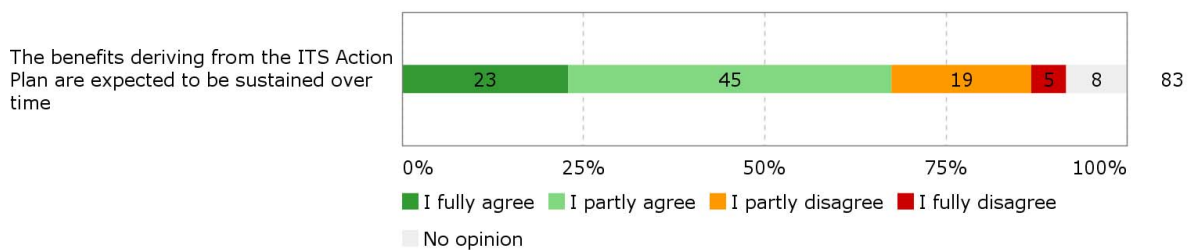
⁹⁴ 68% of respondents partially (30%) or fully (28%) agreed with the statement

The analysis of individual actions also looked into the extent to which each action contributed to socio-economic impacts. No sufficient evidence was found that could be presented in this report. However, interviewees indicated that the Action Plan, by contributing to deployment, also contributed to safer, cleaner and more efficient transport in the long term. This indicates that stakeholders considered the activities of the Action Plan relevant for meeting the socio-economic goals.

Sustainability

In the survey, as presented in Figure 25, almost 70% of respondents either partially (45%) or fully (23%) agreed with the statement that the benefits of the ITS Action Plan are expected to be sustained over time.

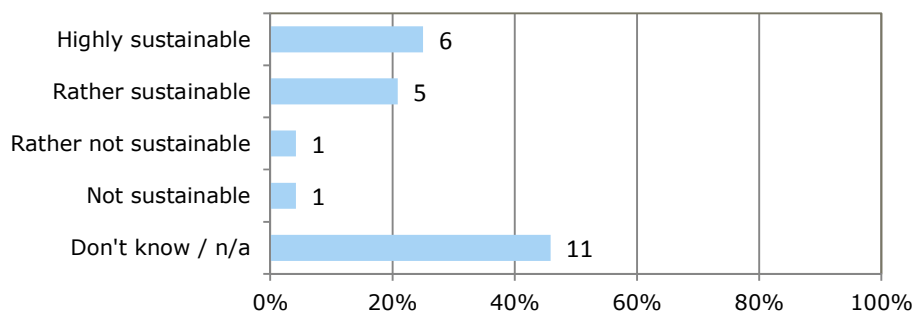
Figure 25, To what extent do you agree with the following statement



In the analysis of actions, the assessment process implied looking into the sustainability of both the effects that have already occurred or are expected to occur as a result of the action. For the purpose of this evaluation, sustainability was based on a number of criteria which related to the legal strength of the expected deliverable (specification, guideline, best practice example etc.), overall level of actual uptake of deliverables by stakeholders, the need for follow-up without which the effects would cease to take place and the assessment by interviewees and respondents on the momentum created by the action.

Due to the limitations of such an approach, unless there was sufficient evidence to support otherwise, the general rule was not to issue any opinion on the sustainability of the action. In addition, if an action was suspended, the general rule was to consider sustainability of effects as “not applicable”. The “potential” for follow-up activities to occur in support of the action plan did not affect the assessment of sustainability, in the sense that unless a certain follow-up measure was certain to occur, it was considered not to take place for the purpose of this assessment.

Figure 26, Expected level of sustainability of achievements (all else being equal)



In general the effects of eleven actions were assessed to be rather (Actions 1.1, 1.2, 1.4, 1.5, and 3.4) or highly sustainable (Actions 1.3, 3.1, 3.2, 4.2, 4.3, 6.1). The sustainability of the effects of actions was found to be higher for actions connected with the ITS Directive and the drafting of specifications.

Actions 6.2 and 6.3 were deemed unsustainable and rather unsustainable, respectively. The reasons for these assessments were that the decision support toolkit would quickly become obsolete without maintenance and update and the volatile nature of political decision making and economic situation in different member states would make funding related rules subject to change over time.

5.2.2 Action Area level

The objectives of the ITS Action Plan and the specific objectives of each Action Area are presented in Table 3, found in section 2.1 of this report.

Action Area 1 – Optimal use of road traffic and travel data,

Action Area 1 is strongly connected with the ITS Directive and more specifically with priority actions (a), (b) and (c) of the Directive. As such, the actions in Action Area 1 are part of the wide process of developing procedures and specifications that will ultimately be up taken by stakeholders. The effects of the actions that form Action Area 1 should necessarily be understood under this general context.

Achievement of the operational objectives

Only one action (1.5) fully achieved its operational objective.

Action 1.4 was due to fully achieve its operational objective soon,⁹⁵ while the remaining two (e.g. 1.1 and 1.2) required additional work⁹⁶ in order to fully achieve their operational objectives.

According to the assessment of stakeholders, Action 1.3 required follow-up in order for the operational objective to become effective.

Follow up and Uptake

In terms of follow-up, all actions in Action Area 1 were followed up or expected to be followed-up in the near future:

- Actions 1.1, 1.3 and 1.4 were followed up in the context of the ITS Directive. Moreover, in case of Action 1.1, the Easyway 2012 Deployment guidelines were following-up on the objectives set by this action.
- Action 1.2 will be followed-up by certain measures that depend on the outcome of the study.⁹⁷
- In the case of Action 1.5, as a result of the promotional work conducted, the topic of multimodal information services is becoming a political priority and will become more important in the near future. As such, follow up is expected.

Uptake occurred or was expected to occur for all actions:

- For Action 1.1, the work that must be conducted in the context of the ITS Directive under priority actions (a) and (b) will constitute instances of the uptake of the results of the action.

⁹⁵ According to Commission Decision of 15 February 2011 concerning the adoption of the Working Programme on the implementation of Directive 2010/40/EU, Specifications under Priority action (c) - Free Safety-Related Minimum Traffic Information are due to be adopted during the 4th Quarter of 2012

⁹⁶ A follow-up study is required for Action 1.1, while for action 1.2 the scope of future work, based on the outcome of the data collected so far has not been fully defined.

⁹⁷ Study to analyse the status quo concerning road-data collection and the provision and reuse of traffic circulation plans, traffic regulations and recommended routes in the EU

- The results of the study of Action 1.2 were expected to be up taken and to guide the future scope of policy in the area.
- In the context of Action 1.3, both the DMWG and eMaps further aligned their work to be in accordance with the results and recommendations of the study.
- The analysis of Action 1.4 showed that stakeholders considered the specifications useful and were already taking into account the work done under this action in their planning activities (in spite of the fact that deployment was not mandatory).

Contribution to enhanced deployment of ITS in Europe

Similar to the points made above, the contribution of this Action Area to enhanced deployment of ITS in Europe was difficult to assess at this point in time as the work was on-going.

As explained in section 7 dealing with relevance, the achievement of this Action Area's objective was an essential prerequisite for enhancing deployment of ITS. In addition to this specific contribution, Action Area 1 aimed to enhance deployment of ITS by ensuring the technical interoperability of data.

For Action 1.3, due to the very complex nature of the area, it was difficult to say the extent one initiative or the other (e.g. work conducted by private firms, INSPIRE, ROSATTE, eMaps, ERTICO, etc.) influenced the attainment of enhanced deployment of ITS in terms of new applications and interoperability. In any case, the most striking contribution observed was the effect the study⁹⁸ conducted under Action 1.3 had on cooperation and coordination by helping align positions of stakeholders.

Contribution to cleaner, safer, more competitive and more efficient transport in Europe

Overall, in the case of Action Area 1, no evidence of impacts on safer, cleaner, more efficient and more competitive transport in Europe could be identified at this point in time.

As a result of the selection of winners of the mobility challenge performed under Action 1.5, an unintended consequence was the argument that can be made supporting the notion that the railway sector can be placed at the backbone of a multimodal transport systems, as railway operators performed well with respect to their ability to deliver winning submissions in both categories.

Sustainability

In terms of sustainability, the expected effects of Action Area 1 were assessed to be rather (Actions 1.1, 1.2, 1.4, and 1.5) or highly sustainable (Action 1.3) for all actions. The positive assessment was due to the fact that the effects of the actions were being re-enforced by the links of this Action Area to the ITS Directive and the process of developing specifications contained therein. Moreover, the momentum that Action 1.3 had helped create in terms of digital mapping was assessed to be very difficult to reverse and there was very little risk of parallel industrial development.

Action Area 2 - Continuity of traffic and freight management,

Action Area 2 is a particular case with respect to achievement of objectives because two of the four actions comprising this area were suspended (e.g. Actions 2.1 and 2.3). As such only the contribution of Actions 2.2 and 2.4 to the Action Plan's objectives were able to be assessed.

⁹⁸ Study regarding the availability of accurate public data for digital maps and their timely updating through cooperation between relevant public bodies and digital map providers, 19 December 2011

As was the case with other actions, the assessment of the extent to which these actions contributed to the objectives of the Action Plan was limited by the fact that the actions were on-going.

Achievement of the operational objectives

With respect to the achievement of the actions' operational objectives, none of the actions in Action Area 2 achieved their operational objective and were not expected to achieve it soon. Action 2.2, eFreight, is to be redefined as part of a broader initiative, while Action 2.4, the work required for EU-wide implementation of the European Electronic Toll Service (EETS), was assessed to be considerable.

Follow up and Uptake

Both on-going actions were being followed up by policy makers and the overall community.

Action 2.2 was being followed-up by a wider initiative on e-Freight.

In the context of Action 2.4, the Association for Electronic Tolling and Interoperable Services (AETIS) was created to gather interest groups and stakeholders in the process of setting up and maintaining EETS.

In terms of uptake, some of the outputs of Action 2.2 were being used in view of future deployment (e.g. Standardisation activities concerning the common framework, the open platform project).

Contribution to enhanced deployment of ITS in Europe

Action Area 2 was mostly designed to contribute to enhanced deployment of ITS by supporting the continuity of ITS services and interoperability of applications across borders, across regions, and between urban and inter-urban areas as well as at the intersection of modes.

Action 2.2 had some, albeit limited, contribution to new applications and interoperability of ITS thanks to the partial uptake of intermediate deliverables (see above). It is expected that additional contribution will come from the initiative planned for 2013.

Action 2.4 also contributed, albeit to a limited extent, to the development of new applications and interoperability. Some examples of ITS development and deployment activities relating to electronic road tolling were cited, such as manufacturers of tachographs working with the EC to develop appropriate devices. Interoperability exercises were also being conducted. For example, Germany and Austria started a project in 2012, where German toll collect boxes could be used in Austria. In France, a new legal tax proposal called "L'écotaxe poids lourds" envisions the collection of road tax through cameras and satellites that read the equipment installed in heavy vehicles and the recorded kilometres travelled. As the tax will affect 600,000 heavy duty vehicles registered in France as well as 200,000 vehicles registered abroad, the technical applications require the development and deployment of interoperable equipment.

An effect on cooperation and coordination was also identified through the creation of the Association for Electronic Tolling and Interoperable Services (AETIS) as a follow-up of this action (see above).

Contribution to cleaner, safer, more competitive and more efficient transport in Europe

This Action Area had no contribution to cleaner, safer, more competitive and more efficient transport in Europe.

Sustainability

As the actions were still on-going, and there was a considerable amount of work envisioned for the full realisation of impacts and results, no assessment of sustainability was possible at this time.

Action Area 3, Road safety and security,

The causality links between the activities performed under Action Area 3 and the objectives of the Action Plan are relatively straight forward. The analysis of effectiveness of this Action Area to the development and deployment of ITS applications which have a direct effect on road safety and security is therefore less difficult than for the other Action Areas. Limitations regarding the timing are, on the other hand, still present.

Achievement of the operational objectives

None of the five actions of this Area achieved their operational objective, and the assessment of individual actions showed that the operational objective of only one action (e.g. Action 3.4) was expected to be met soon. However, it is the assessment of the Evaluator that the wording of the objective⁹⁹ of this action is vague, and there is a large degree of uncertainty as to what is required for completion.

The other four actions required additional work in order to fully achieve their operational objectives.

For Action 3.1, the first part of the action, related to Advanced Emergency Braking Systems (AEBS) and Lane Departure Warning Systems (LDWS), was fully met. The work for the second part (assessment and promotion of future Advanced Driver Assistance Systems (ADAS) was still on-going,

Action 3.2 was in a very advanced stage. The operational objective of this action¹⁰⁰ contains specific parts that can be considered as completed,¹⁰¹ as well as a section of a continuous nature that is still on-going. Considerable efforts and follow-up activities are necessary in order to reach the target of having eCall devices in all new passenger vehicles by 2015.¹⁰²

Action 3.3 was suspended. Moreover, the objective of the action¹⁰³ had not been met and the questions on whether a new regulatory framework on HMI was necessary, as well as what legal power it should have, were not answered. The correct and safe use of nomadic devices, including their safe fitting in the vehicle, and more generally the issue of safe Human Machine Interfaces (HMI) was one of the recommendations resulting from the study¹⁰⁴ conducted under the context of Action 3.4.

In the case of Action 3.5, which was also in a fairly advanced stage, the data required for finalisation was not available at the cut-off date for data collection of this evaluation (31

⁹⁹ *Development of appropriate measures including best practice guidelines concerning the impact of ITS applications and services on the safety and comfort of vulnerable road users*

¹⁰⁰ Following the working of the Action Plan, the objective of Action 3.2 is to support the implementation platform for the harmonised introduction of pan-European eCall, including awareness campaigns, upgrading Public Safety Answering Points' infrastructures and an assessment of the need for regulation.

¹⁰¹ The Awareness campaign has been completed in December 2010, upgrading the PSAP is well underway as a result of the setting up of the European eCall Implementation Platform (EeIP) and the work undertaken under the Pre-deployment pilot (HeERO) while the Impact assessment on the need for regulation was completed in November 2010.

¹⁰² European Commission Press Release: *Transport: Commission Helping To Deploy 112 Ecall For Emergency Services*, Brussels, 28 November 2012

¹⁰³ *Development of a regulatory framework on a safe on-board Human-Machine- Interface and the integration of nomadic devices*

¹⁰⁴ D4-Final Report Action 3.4-Safety and comfort of the Vulnerable Road Users, Amsterdam, 20 May 2011

November 2012), although intensive work was planned for the following months. Drafting specifications under the ITS Directive¹⁰⁵ was planned to be finalised by February 2013.

Follow up and Uptake

All the sufficiently advanced actions (e.g. Actions 3.1, 3.2 and 3.4) have been or are expected to be followed up or uptaken:

As a result of *inter alia* the activities carried out under Action 3.1, as of 1 November 2013, advanced emergency braking systems and lane departure warning systems will become mandatory, and currently, manufacturers are designing vehicles to meet the legal and technical requirements.

Similarly, the activities of Action 3.2 were significantly followed-up in different Member States, and even outside of the EU, further uptake includes both technical as well as regulatory measures.

In the case of Action 3.4, the iMobility Working Group on Vulnerable Users¹⁰⁶ was a follow-up initiative taken by stakeholders. In terms of uptake, several recommendations of the study have been taken up by Unit C4 of DG MOVE dealing with Road safety.

Furthermore, without being a follow-up activity *per se*,¹⁰⁷ the FP7 call for proposals on the impacts of Intelligent Transport Systems on vulnerable road users also funded a number of pilot and implementation projects of ITS applications that build on the recommendations of the study. This is an example of effective uptake of the study recommendations to shape on-going policies.

Contribution to enhanced deployment of ITS in Europe

The main mechanism by which the actions of this area were attempting to enhance deployment of ITS was by directly supporting the development (e.g. Actions 3.1, 3.5) or by promoting/mandating the deployment of safety related ITS (e.g. Actions 3.1 and 3.2).

The analysis of individual actions has shown that three actions in this area have already had a high contribution on the development and deployment of new applications (e.g. Actions 3.1, 3.2, 3.4). Action 3.1 supported the deployment of Advanced Emergency Braking Systems (AEBS) and Lane Departure Warning Systems (LDWS). The pre-deployment project HeERO and the start-up of an interoperable and harmonised 112 based in-vehicle emergency call system were supported under Action 3.2 while Action 3.4 contributed significantly to the development of ITS applications with the VRU in mind.

The actions in this area are also contributing to enhanced deployment of ITS through the mechanism of cooperation and coordination. Actions 3.1, 3.2 and to some extent 3.4 were also assessed to have at least some (high in the case of Action 3.2) contribution to increased cooperation and coordination of ITS activities in Europe.

Contribution to cleaner, safer, more competitive and more efficient transport in Europe

The objective of Action Area 3 is to *protect travelers and transport workers*; this objective overlaps with the socio-economic impact of safer transport that significantly reduces the length of the causality chain. However, as explained above, since most of the actions were still ongoing, it was premature to attempt to identify effects at this point in time.

¹⁰⁵ Priority Action (e)

¹⁰⁶ The VRU WG aims at creating a forum encompassing all key stakeholders in the area of Vulnerable Road Users safety enhancement, and at supporting a similar objective as the action 3.4

¹⁰⁷ The FP7 call for proposals is seen as an activity undertaken in the course of implementation of Action 3.4

In the case of Action 3.4, which was relatively closer to completion, evidence of some contribution to road safety and security was identified as a result of the development of ITS applications for Vulnerable Users following the FP7 research call.¹⁰⁸ However, this activity was also on-going.

It is expected that once implementation of this Action Area is complete, the effects on road safety and security will be considerable.

Sustainability

The expected effects and achievements of Action Area 3 have been assessed to be, overall, highly sustainable. The reasons for this assessment rely on the fact that the underlying effects will be pinned down by legislation in the case of three actions (Actions 3.1, 3.2 and eventually Action 3.5).

The effects of Action 3.4 were also considered rather sustainable, as the developing consortia will have a commercial interest in bringing the developed applications to the user market.

Action Area 4, Integration of the vehicle into the transport infrastructure,

In contrast with Action Area 3, the causality chains between the activities conducted under Action Area 4 and its effects on the achievement of the Action Plan's objectives were complex and difficult to analyse. In addition to this limitation, the technically complex work that needs to be undertaken in order for the achievement of the actions in this area was not sufficiently advanced, which in turn made assessing evidence of impacts very difficult.

Achievement of the operational objectives

Only one of the four actions in this area achieved its operational objective as defined by the wording of the Action Plan (e.g. Action 4.4).¹⁰⁹ However, even though the mandate regarding cooperative systems was defined and being used for standardisation, work was still on-going to ensure the effectiveness of the action through implementation of the mandate via standards. Moreover, only one mandate had been given so far,¹¹⁰ and the European Commission aimed to approve the remaining set of standards to be prepared by the ESOs. The assessment on the achievement of operational objective (as well as the progress status as presented in section 4.1) will depend, however, on the interpretation given to the wording in the Action Plan. The evaluator interpreted the wording of the objective to be in singular (as in one mandate) while the European Commission argued that more mandates were planned and envisioned. In the interpretation of the European Commission (which should prevail) it can therefore be mentioned that the operational objective of Action 4.4 has not been achieved.

For the three other actions, the realisation of the operational objective was at different stages of completion but overall considerable work still needed to be undertaken.

In the context of Action 4.1, the adoption of an open in-vehicle platform architecture requires considerable time (estimated at a few years) for full realisation and therefore the action can be considered to be at an early stage as of now.

¹⁰⁸ SST.2012.4.1-4. Impacts of Intelligent Transport Systems on vulnerable road users

¹⁰⁹ Definition of a mandate for the European Standardisation Organisations to develop harmonised standards for ITS implementation, in particular regarding cooperative systems.

¹¹⁰ The European Commission Mandate M/453 has invited the European Standardisation Organisations to prepare a coherent set of standards, technical specifications and technical reports within the timescale required in the Mandate to support European Community wide implementation and deployment of Co-operative Intelligent Transport Systems

The operational objective of Action 4.2¹¹¹ was planned to be achieved in 2013; however, even such a target is considered to be ambitious in light of the complexity of the area and the positions of stakeholders on the harmonised approach.

In the case of Action 4.3, certain parts of the action were advanced. Specifications for DATEX were ready, specifications for V2V were expected for 2013 and work was on-going on a number of standards.¹¹² However, the full achievement of the operational objective¹¹³ was not expected to be met soon because the expected year for the first release of specifications was not available for I2I, and was planned for 2014-2015 for V2I communication in co-operative systems.

Follow up and Uptake

Despite the fact that, overall, the future action required for the full achievement of Action Area 4 is considerable, the level of follow-up and uptake of partial results was fairly high.

Follow-up activities were already taking place or expected soon for Actions 4.1 and Action 4.2. For Action 4.1, the European Commission launched a follow-up study in September 2012 and the research project OVERSEE deployed a secure in-vehicle open platform approach. For Action 4.2, ASECAP, CEDR, C2C-CC and POLIS joined to form a group called the Amsterdam Group in order to work towards drafting and implementing a formal Road Map. Additional follow-up was taking place through continuing cooperation with third countries. The mandate of Action 4.4 was being implemented through standards.

Uptake of partial deliverables was taking place for Actions 4.2 (vehicle manufacturers conducted their own national and international field operational tests, indications that technical solutions were being used), Action 4.3 (some of the standards under development were already used in field operational tests) and Action 4.4 (some of the standards were being used by the industry, such as standards regarding eCall, and applications for regulated vehicles were close to implementation).

Contribution to enhanced deployment of ITS in Europe

The main mechanism with which the actions in Action Area 4 aimed to contribute to enhanced deployment of ITS in Europe was to ensure the technical interoperability through standards, specifications and a harmonised approach. It is therefore reasonable to expect that the effects of this Action Area were to mainly become visible once the actions fully achieve their operational objectives.

Partially, Action 4.3 already produced effects with respect to increasing interoperability, as vehicle manufacturers were already designing vehicles that met the standards and were carrying out operational tests.

Some, albeit limited, contribution towards interoperability through partial uptake was also identified as a result of Actions 4.2 and 4.4.

Contribution to cleaner, safer, more competitive and more efficient transport in Europe

Field tests carried out in relation with the development of cooperative systems demonstrated the potential benefits of ITS with respect to the socio-economic impacts.

¹¹¹ *Development and evaluation of cooperative systems in view of the definition of a harmonised approach*

¹¹² ETSI (the European Telecommunications Standards Institute), together with standard organisations CEN and ISO, is developing specifications for Cooperative ITS. ETSI TC ITS is working with CEN TC278 and ISO TC204 technical committees to develop a complementary set of standards. ETSI has a particular focus on developing test specifications for Cooperative ITS.

¹¹³ *Definition of specifications for infrastructure-to-infrastructure (I2I), vehicle-to-infrastructure (V2I) and vehicle-to-vehicle (V2V) communication in co-operative systems*

As the implementation of this Action Area was still, overall, in the early stages, it was too early to assess any evidence of contribution of the actions towards socio-economic impacts.

Sustainability

As described in the sections above, standardisation is seen as a necessary step to ensure interoperability and foster deployment and as such the actions in this area will eventually result in standards and specifications. The technical interoperability, ensured through the definition of standards which are recognised by authorities as a model or an example, have the potential to be highly sustainable if the right conditions are met.

The analysis of individual actions has assessed that the achievements of Actions 4.2 and 4.3 to be highly sustainable as uptake is already foreseen.

An assessment regarding the sustainability of Actions 4.1 and 4.4 was difficult to make due to the fact that, with respect to Action 4.1 deployment is conditional to a suitable business model, which is still missing and as such it was considered too early to make an assessment. Similarly, in case of Action 4.4, standards will be subject to the need for update in order to take into account technological developments in order for them to remain appropriate, as such an assessment could not be made at this stage.

Action Area 5, Data security and protection, and liability issues

The impact assessment that preceded the adoption of the Action Plan and the proposal for the ITS Directive indicated that data protection and liability issues played a major part in the development and deployment of ITS applications and services. As such, Action Area 5 was designed specifically to address these specific areas concerning ITS deployment.

Only two actions are part of this area: Action 5.1 dealing with data protection and Action 5.2 with liability.

Achievement of the operational objectives

Neither of the actions in this area achieved their operational objectives, although the implementation of both of them was advanced.

In terms of the wording of the Action Plan, the achievement of the second part of the operational objective¹¹⁴ of Action 5.1 depends on the interpretation that can be given to the term "appropriate measures". A possible source for interpretation of appropriate measures can be found in the results of the study prepared in the context of Action 5.1. As the recommendation of study 5.1 were quite clear and provided a clear path on how and what to do next, the European Commission was confident that the operational objective of this action would be met soon. In the opinion of the evaluator (detailed in section 8), the scope and content of appropriate measures should be for the object of a new work plan for the finalisation of this Action.

As described in the Action Plan, the operational objective¹¹⁵ of Action 5.2 was expected to be met shortly through the finalisation of the on-going study.¹¹⁶ In contrast with Action 5.1, for which the EU had strong competences in the area of regulating data protection, the scope of the work that can be conducted under Action 5.2 was confined by the limited mandate of the EU in the area of regulating liability issues.

¹¹⁴ Assess the security and personal data protection aspects related to the handling of data in ITS applications and services and propose measures in full compliance with Community legislation

¹¹⁵ Address the liability issues pertaining to the use of ITS applications and notably in-vehicle safety systems

¹¹⁶ Study to identify major liability issues that needs to be addressed in the context of deployment of ITS applications and services, ITS Action Plan - Action 5.2, Framework Service Contract TREN/G4/FV-2008/475/01

Follow up and Uptake

The only instance of follow-up and/or uptake expected at this stage was the uptake of the study recommendations¹¹⁷ of Action 5.1 by the European Commission for shaping future policy and the scope of the concrete measures.

Contribution to enhanced deployment of ITS in Europe

Firstly, it should be mentioned that, in contrast with other actions in the ITS Action Plan, Action 5.1 was not specifically aimed at enhancing deployment *per se*.

As indicated by the Action Area objective, Action 5.1 was aimed at ensuring data integrity and confidentiality in order to ensure protection of all parties' interest, especially citizens' rights.

Data protection in the EU is a fundamental right, and the action in itself does not impose obligations. Rather, it raises awareness on the issues and bridges the gap between the ITS community and the legislation on data protection. In that sense, the action was expected to help ITS operators and developers comply with their legal obligations and mitigate the risks of noncompliance.

Moreover, privacy concerns and data security concerns can lead to the rejection of ITS applications by the end-users. Hence, the users' trust must be strengthened in order to raise acceptance in the use of ITS and increase its penetration and deployment.

In this sense it is fair to assume that the Action will support the development of ITS. However, the study conducted under Action 5.1 was assessed by stakeholders to insufficiently tackle important issues such as data security and the use of data for law enforcement purposes. Providing clarity in these areas is considered to be crucial for ensuring user acceptance of ITS.

The effect on enhanced deployment of ITS of Action 5.1 is therefore an *indirect* effect, and due to the fact that the action was on-going, it was too early to assess the contribution of the action to this objective.

Action 5.2 aimed to *assess the liability of parties in ITS deployment and application*. As the study was on-going, it was too early to judge the contribution of this action to the objective.

Contribution to cleaner, safer, more competitive and more efficient transport in Europe

See above.

Sustainability

It was too early to assess the sustainability of the effects of this Action Area.

Action Area 6, European ITS cooperation and coordination

Action Area 6 was one of the most advanced areas of the Action Plan in terms of implementation, with three out of four actions completed.

Achievement of the operational objectives

The operational objectives of three out of four actions in the area were fully achieved.

The operational objective¹¹⁸ of Action 6.1 was achieved through the adoption and entry into force of the ITS Directive.¹¹⁹

¹¹⁷ Study addressing specific data-security and data protection issues related to ITS applications and services

The operational objective¹²⁰ of Action 6.2 was achieved by developing the decision support toolkit¹²¹. The decision making toolkit was developed by the 2DECIDE project.¹²² The project was funded by the European Commission DG MOVE under the FP7 (7th Framework Programme for Research and Development), and it was implemented by a consortium led by AustriaTech.

The operational objective¹²³ of Action 6.4 was achieved through the work of the Urban ITS Expert Group, which very recently presented the outcome of their work that included guidelines on the three key applications of urban ITS (travel information, traffic management, including urban logistics, and smart ticketing), a collection of best practices on ITS deployment and a report on possible standardisation needs.

The operational objective¹²⁴ of Action 6.3 was not met and was not expected to be met soon as the action was pending the stabilisation of negotiation on the Multi Annual Financial Framework for 2014 – 2020 in order for the second part of the action to be implemented. The achievement of the operational objective of this action required the inclusion of both EU and national funding.

Follow up and uptake

Action 6.1 was being followed-up by the work conducted under the framework of the ITS Directive. As such, the adoption of specifications for the six priority actions was planned as follows:

- EU-wide Multi-Modal travel information (a)- 4th Quarter 2014;
- EU-wide real-time traffic information (b) - 4th Quarter 2013;
- Free safety-related minimum traffic information (c) - 4th Quarter 2012;
- Interoperable EU-wide eCall (d) - 4th quarter 2012;
- Information services for safe and secure truck parking (e)- 4th Quarter 2012;
- Reservation services for truck parking (f) - 4th Quarter 2013.

Actions 6.2 and 6.3 were not being followed-up or up taken. Action 6.3 was suspended, while for Action 6.2, although the toolkit had numerous registered users,¹²⁵ in the assessment of the developers it was not used for decision making purposes at all.

With respect to follow-up of Action 6.4, there was insufficient clarity regarding the future of the action once the mandate of the expert group ended. The question of continuation of work remained unclear. However, to some extent follow-up activities fall within the scope of the urban mobility action plan.

A direct follow-up of Action 6.4 was being considered at the level of ERTICO, which was in a position to set-up an urban ITS platform for continuing the work of the urban ITS expert group. While this was a welcome initiative, some stakeholders raised concern regarding whether the new expert group would respect the balance of interests in the area to the same extent as the expert group set up by the European Commission.

¹¹⁸ *Proposal for a legal framework for European coordination on the Europe-wide deployment of ITS*

¹¹⁹ Directive 2010/40/EU

¹²⁰ *Development of a decision-support toolkit for investment decisions in ITS applications and services*

¹²¹ The toolkit is operational and available on www.its-toolkit.eu

¹²² Contract number TREN/FP7TR/233608/"2DECIDE"

¹²³ *Set-up of a specific ITS collaboration platform between Member States and regional/local governments to promote ITS initiatives in the area of urban mobility*

¹²⁴ *Development of guidelines for the public funding from both EU (e.g. TEN-T and Structural Funds) and national sources of ITS facilities and services*

¹²⁵ 250 registered users in September 2012

With respect to the uptake of the deliverables of Action 6.4, the ideal scenario involved an endorsement by the European Commission of the guidelines, the form and legal strength of which were yet to be decided.

Contribution to enhanced deployment of ITS in Europe

As presented in the impact assessment accompanying the adoption of the ITS Action Plan and the proposal of the ITS Directive, the enhanced deployment of ITS in Europe would also be supported by the achievement of the specific objective of *cooperation and effective coordination*.

The objectives of this Action Area were to ensure a synchronised deployment of ITS in Europe and provide guidance and technical support to facilitate consensus-building and effective decision-making.

With respect to *ensuring synchronised deployment of ITS*, the contribution and causal chains between the actions and this objective were difficult to construct, as synchronised deployment was influenced by a multitude of other factors such as technical, political and economic readiness, actual and perceived needs, the existence of valid business cases, etc.

However, with respect to the second part of the objective (*providing guidance and technical support to facilitate consensus-building and effective decision-making*), it was assessed that, overall, the actions in this area had a high contribution; a result that was strongly skewed by the disproportionately high importance and effectiveness of Action 6.1.

Also, within its own scope of urban ITS, Action 6.4 was also assessed to have had a high contribution to this objective.

On the other hand, there was no contribution of Action 6.2 to this objective due to the limited use of the support toolkit for decision making.

Action 6.3 also had no effect on the achievement of this objective, as the action was suspended.

Specifically, Actions 6.1 and 6.4 contributed to this objective through the effective cooperation of the ITS Advisory Group, the ITS Committee, the Urban ITS Expert Group and the public consultation and stakeholder involvement that the individual process of implementation of each actions entailed (e.g. developing and adopting specifications under the ITS Directive involves extensive stakeholder consultation and impact assessments, and the process of drafting and promoting guidelines for ITS deployment for the three key applications¹²⁶ of urban ITS engaged a wide range of stakeholders involving a wide range of stakeholder groups and a fair territorial coverage, etc.).

Additionally, the actions of this Action Area had an indirect effect of increasing interoperability of ITS through the drafting of specifications under the ITS Directive and the specifications developed by the urban ITS expert group. However, as the specifications under the ITS Directive were not yet adopted and the specifications developed by the Urban ITS Expert Group were only recently finalised, it was too early to make an assessment of the effects on interoperability

Contribution to cleaner, safer, more competitive and more efficient transport in Europe

With respect to the contribution of this Action Area to the socio-economic impacts, the realisation of these strictly depends on the effects on deployment of ITS. While cooperation and coordination were clearly achieved, effects on interoperability were yet to become visible.

As such, since specifications drafted as a result of Actions 6.1 and 6.4 were yet to be adopted (and up taken), it was too early to identify any concrete socio-economic impacts.

¹²⁶ travel information, traffic management (incl. urban logistics) and smart ticketing

If all else remains equal, no effects in terms of socio economic objectives were expected as a result of Actions 6.2 and 6.3.

Sustainability

The deliverable of Action 6.1, the ITS Directive, was a legislative act transposed in the legislative frameworks of Member States. Moreover, the specifications drafted and adopted under the ITS Directive were binding and will become part of the EU acquis. In this respect, the achievements of Action 6.1 were assessed to be highly sustainable.

The effects of Action 6.2 were assessed to be unsustainable, as the toolkit requires constant maintenance and updating with evaluation results of implemented ITS projects, something that was not being ensured at the moment.

No assessment of sustainability of achievement was made with respect to Actions 6.3 (suspended) and 6.4 (specifications were not finalised at the time of drafting this report).

5.2.3 Conclusion

Achievement of the operational objectives

Generally speaking, for the actions that were implemented and now considered as completed (see section of progress status), the operational objective was fully achieved. Understandably, for the actions that were still "on-going", the operational objective had not been met and was not expected to be met in the short term.

Follow up and uptake

Follow-up activities at EU or national levels were already taking place for eleven actions. The results (final or intermediary) of eight had already been up taken and the results of an additional seven were expected to be soon. This was, overall, a positive result, taking into account the degree of advancement of implementation of the Action Plan.

Contribution to enhanced deployment of ITS in Europe

As the Action plan was on-going, a large number of actions had yet to show effects in terms of deployment of ITS. Overall, evidence showed that positive impact could be expected in terms of interoperability of applications and systems and continuity of services in the EU, but very limited in terms of privacy and liability issues.

Evidence of impacts, although still anecdotal, was identified. The highest contribution of the ITS Action Plan to ITS deployment was in the area of cooperation and coordination. The analysis also showed that the actions were already contributing to the development of new applications and to increasing technical interoperability of ITS.

Contribution to cleaner, safer, more competitive and more efficient transport in Europe

No evidence of socio-economic impacts was identified. Large scale deployment remained to be seen.

Sustainability

In general, all else being equal, the outcomes of a significant number of actions that an assessment was possible for were found to be rather or highly sustainable.

6. EFFICIENCY

This chapter addresses the following evaluation question:

- **EQ9: To what extent have the actions undertaken so far been efficient and their (expected) effects achieved with reasonable resources?**

In order to answer this evaluation question, three indicators were examined:

- assessment by European Commission staff, participants and stakeholders of whether the (expected) outputs were achieved **at reasonable costs**;
- assessment by European Commission staff, participants and stakeholders of **possible alternative actions (activities)** offering higher cost-effectiveness;
- comparison of **input** with (expected) **effectiveness**.

6.1 Limitations

Measuring cost-effectiveness (efficiency) requires a comprehensive assessment of costs (implementation and compliance costs for all stakeholders) and benefits. This mid-term evaluation lacks elements for both elements of the equation, and it has not been the purpose of this evaluation to conduct a fully-fledged cost-benefit or cost-effectiveness analysis. Rather, this should be conducted at the action level, and would require a considerable amount of work. Hence, the collection of cost data in this mid-term evaluation focused on implementation costs of the actions.

The process for systematically collecting data on implementation costs, i.e. the financial and human resources spent by the European Commission for the implementation of each action, was very difficult for a number of reasons:

- Lack of activity-based management at the action level: due to the lack of project management at the action level, there is no clearly established budget for actions, and no follow-up of the staff resources allocated and actually spent on each of them. In order to get a rough estimate of the costs of the actions, data on the costs of each individual activity implemented in the context of an action was collected and compiled, and FTEs were estimated based on the best estimate of European Commission project officers.
- Difficulties in attributing the costs of certain projects or policy initiatives to the actions of the Action Plan: a number of FP7 or EU initiatives (e.g. eSafety, iCarsupport, eFreight, eCall) fall within the scope of the Action Plan, but they also pursue their own, broader objectives, and their costs cannot be fully appropriated to any individual action (for example, the costs of the eSafety Challenge and Awareness Raising and iCar Support cannot be fully attributed to Action 3.2).
- An example of the limitations presented in both bullet points above was the case of Action 3.4 for which the evaluator made a methodological choice of including the budget

of the FP7 call on VRU in the budget of the action even though it was not possible to systematically include all the costs of all FP7 projects related to other actions in their respective budgets (hence causing possible consistency problems). This was motivated by the very strong links of this specific call and Action 3.4, together with the impossibility of separating impacts of the action from the impacts resulting from the FP7 project.

In the course of the implementation of the ITS Action Plan, implementation costs were borne by other organisations than the European Commission (e.g. travel costs to attend workshops, costs incurred by standardisation bodies in the course of their work, time spent by the urban ITS expert group members, costs borne by national administrations in connection with the work of the members of the ITS Committee, etc.). These costs were not subject to a valuation of inputs because, in light of the difficulties in gathering such information from the European Commission, this would have proved to be an impossible task within the scope of the evaluation. However, these costs did have an impact on the stakeholders' understanding of efficiency. In addition, it was difficult for stakeholders to focus on the costs of implementation only; for the industry, for instance, efficiency relates to the cost (and potentially benefits) of implementing the outputs of the Action Plan.

Finally, any attempt to assess the allocation of resources against (potential) impact on ITS deployment or potential socio-economic impacts was hampered by the lack of strong evidence of the impact of the actions.

6.2 Overview of Commission's allocation of resources

Based on data collected from desk research of award notices and from European Commission staff estimates, the European Commission's allocation of resources to actions are presented in Table 9, below.

Table 9, Overview of resources allocated for the Implementation of the ITS Action Plan

Nr.	Action in the Action Plan	Total Costs	FTE ¹²⁷	Source of funds
1.1	Real time traffic & travel information	159 414 ¹²⁸	Data not available	DG MOVE ITS FwC
1.2	Collection & provision of road data	96 889	Data not available	DG MOVE ITS FwC
1.3	Data for digital maps	100 303	0.25 x 16	DG MOVE ITS FwC
1.4	Free minimum information	159 414 ¹²⁹	Data not available	DG MOVE ITS FwC
1.5	Promotion of multimodal journey planners	c.a. 150 000 ¹³⁰	0.4 x 13	DG MOVE ITS FwC + DG COMM FwC
2.1	Continuity of ITS services	c.a. 30 000 ¹³¹	Data not available	DG MOVE ITS FwC
2.2	eFreight	Data not available	Data not available	Data not available
2.3	ITS Architecture	n/a	n/a	n/a
2.4	Electronic road tolling	164 225 ¹³²	Data not available	DG MOVE ITS FwC

¹²⁷ Expressed as number of officers * FTE * the number of months worked

¹²⁸ This cost refers to the cost of the study which regarded both Action 1.1 and Action 1.4: *Study regarding guaranteed access to traffic and travel data and free provision of universal traffic information,*

¹²⁹ See Comment 127128

¹³⁰ Cost of study, approx. 71 114, cost of challenge, approx. 80 000

¹³¹ The value of the signed contract was initially 108 739 EUR, however, the study was stopped and the settlement was agreed at approx. 30 000 EUR

¹³² Mid-term review of EETS

Nr.	Action in the Action Plan	Total Costs	FTE ¹²⁷	Source of funds
3.1	Promotion of safety related ITS	Data not available	2 x 0,3 x 53	Data not available
3.2	eCall	10 000 000 ¹³³ + 1 823 822 ¹³⁴ + 1 949 767 ¹³⁵	0.2 x 41 + 0,2 x 24	ICT PSP Competitiveness & Innovation Programme
3.3	Human-machine interface (HMI)	135 020	Data not available	Data not available
3.4	Vulnerable road users	59 125 + c.a. 3 000 000	Data not available	DG MOVE ITS FwC + FP7 ¹³⁶
3.5	Secured truck parking	109 978	Data not available	
4.1	Open in-vehicle platform	145 125	Data not available	DG MOVE ITS FwC
4.2	Cooperative vehicle systems	2 113 314 ¹³⁷ + 1 045 000 ¹³⁸	Data not available	FP7 ¹³⁹
4.3	I2I, V2I, V2V communication	Data not available	Data not available	
4.4	Standardisation mandate	Data not available	Data not available	
5.1	Security, data protection	80 539	Data not available	DG MOVE ITS FwC
5.2	Liability issues	88 189		DG MOVE ITS FwC
6.1	Legal framework for coordination	n/a	Data not available	
6.2	Decision support toolkit	1 800 000	Data not available	FP7 ¹⁴⁰
6.3	Funding guidelines	28 750	Data not available	DG MOVE ITS FwC
6.4	Urban ITS platform	40.313 ¹⁴¹ + 102.125 ¹⁴² + 37. 625 ¹⁴³	Data not available	DG MOVE ITS FwC

6.3 Analysis at Action Plan level

Assessment on whether (expected) outputs have been achieved at reasonable costs

In the analysis of Actions, European Commission staff and the key stakeholders were asked, during the interviews, to give their best assessment of whether the implementation of the action(s), had so far been efficient and its (expected) outputs achieved at a reasonable cost.

Interviewees generally considered that the outputs were achieved at a reasonable cost. More specifically, the studies conducted in the context of the Action Plan were objectively inexpensive,

¹³³ Total budget for the HeERO project- 10 000 000 EUR (5 000 000 EUR (EU funding))

¹³⁴ eSafety Challenge and Awareness Raising,

http://cordis.europa.eu/search/index.cfm?fuseaction=proj.document&PJ_RCN=11092666

¹³⁵ iCar Support, http://ec.europa.eu/information_society/activities/esafety/doc/rtd_projects/fact_sheets_fp7/icarsupport.pdf

¹³⁶ SST.2012.4.1-4. Impacts of Intelligent Transport Systems on vulnerable road users

¹³⁷ FESTA Support Action, EU contribution: EUR 1 398 053, http://cordis.europa.eu/projects/rcn/85236_en.html

¹³⁸ Cost of Extending Framework Architecture For Cooperative Systems, <http://www.frame-online.net/sites/default/files/eframe-project/deliverables/Factsheet1c.pdf>

¹³⁹ FP7 Specific programme 'Cooperation' - Research theme: 'Information and communication technologies'

¹⁴⁰ 7th Framework Programme for Research and Development

¹⁴¹ Support contract Part 1, 6 Months in 2010

¹⁴² Support contract, Part 2, 13 Months, 2011

¹⁴³ Support contract, part 3, 4 Months, 2012

and assessed by the stakeholders interviewed to have generally delivered very good value for money. In one example, the costs were assessed by interviewees (external stakeholders) to have been even lower than they could have been. For example, the external stakeholder interviewed in connection with Action 3.3 mentioned that his organisation considered tendering for a study but took the decision not to because the budget was considered much too low. In this instance, the study was conducted by another consultancy and its quality assessed to be rather satisfactory.

Based on these comments, but also an objective assessment of the study costs (around EUR 100,000 per study in average), it is possible to conclude that outsourcing baseline studies to external contractors proved to be a cost-efficient starting point for many actions.

With respect to the cost-effectiveness of FP7 projects connected with the Action Plan, no conclusion can be drawn based on the limited data collected.

A somewhat recurrent issue mentioned by interviewees concerned the efficiency of the workshops as *dissemination tools*. Interviewees considered that the participants' time was not always used to its best potential. For an effective dialogue to take place, results would have to be disseminated beforehand, and only then could stakeholders meet and discuss.

Also, stakeholders indicated that a higher degree of consistency and complementarity between activities within an action, and between actions, would be beneficial to the overall efficiency of the work. This includes studies whose specifications are not always sufficiently well designed to serve the purpose of follow-up activities within an action (e.g. in Action 1.1 and 1.4). This also includes research projects that sometimes overlap and are duplicated (e.g. in Action 2.4). This all links to the weaknesses identified in terms of project management and planning and overarching coordination across DGs.

In the online survey, respondents who answered specific questions on selected actions were asked whether the outputs of the action were achieved (or expected to be achieved) with reasonable resources (cost, time, efforts etc.). The results showed that, overall, half or more respondents agreed with this statement in only seven actions. Moreover, survey respondents' opinion of the costs-effectiveness of the action was rather negative.

The analysis of the justifications provided by survey respondents indicates that respondents did not really address the question in terms of the cost of the outputs, but in terms of the cost of achieving impacts. In most instances, comments pointed to the lack of results in spite of many years of efforts.

The latter point most probably explains the discrepancies between interviews and survey results. Survey respondents assessed efficiency in relation with its higher level effects (which, as explained in Section 5 on effectiveness, have yet to materialise) while key stakeholders interviewed interpreted outputs as concrete deliverables (such as studies, workshops, specifications, guidelines, etc.).

Assessment on possible alternative actions (activities) offering higher cost-effectiveness

In the analysis of Actions, respondents were asked if the (expected) outputs could be achieved through alternative approaches offering higher cost-effectiveness. In general, respondents couldn't mention any example of alternatives, which is a positive finding.

One recurring comment made by stakeholders was that workshops were sometimes used as dissemination activities rather than as a truly participatory tool. This proved not to be cost-effective, as there are much more cost-effective dissemination approaches than workshops (note that in their assessment, stakeholders take their own costs into consideration).

Comparison of input with (expected) effectiveness

From the broader perspective at Action Plan level, it was seen that impacts were yet to be observed. However, the contribution of the Action Plan in terms of fostering cooperation between stakeholders, raising awareness of the benefits of ITS and the obstacles to deployment, as well as the progress made especially in view of ensuring interoperability (through the definition of standards and specifications), should be compared to the overall limited dedicated resources spent by the European Commission for the implementation of the Action Plan. The Action Plan was very ambitious, but dedicated resources, on the contrary, were limited.

The budget of individual actions varied considerably from multi-million euro actions (e.g. Actions 3.2, 4.2, 3.4, 6.2) to actions that implemented with a budget of around 100,000 Euros.

The budget allocation does not reflect the (expected) contribution of actions to the Action Plan's objectives. As such, the expected contribution of Action Area 1, which had a relatively low budget, was considered to be very high with respect to enhancing deployment of ITS. On the other hand, the (expected) contribution to enhancing deployment of ITS of Action Area 4 was not necessarily higher than for Action Area 1, yet the budget allocated to actions in Area 4 was by far higher than the budget of Action Area 1.

The budget allocation between actions does not necessarily reflect the level of importance or priority given to actions, with respect to their (expected) contribution to the Action Plan's objectives. The budget allocation rather reflects the nature of the work that needs to be undertaken in order to achieve the operational objectives of each action. As such, actions involving policy making, drafting of procedures, legislation, specifications and standards (e.g. all actions in Action Area 1, and Actions 3.3, 5.1, 6.1) exhibited a much lower cost than actions focusing on development and deployment (e.g. Actions 3.4, 3.2, 4.2).

At the action level, only Action 6.2 was a serious source of concerns, as the decision support toolkit cost almost EUR 2 million. The output was not considered to be of outstanding quality, and the lack of input data hampers the value offered by the tool, especially since no plan was made to ensure that it is maintained over time. This is probably the only instance where cost-effectiveness was seriously at stake.

6.4 Conclusion

In terms of concrete deliverables, the outputs were generally achieved at reasonable cost. More specifically, the studies conducted in the context of the Action Plan were assessed to have generally delivered very good value for money and a cost-effective starting point for many actions.

It was not possible to identify more cost-effective approaches to produce the concrete deliverables and achieve the operational objectives of the actions.

The wider stakeholder community may have some concerns regarding the cost-effectiveness of the Action Plan. However, this proves to be more an effectiveness rather than a cost-effectiveness issue as such: concrete outcomes are still yet to be seen in most Actions.

The contribution of the Action Plan, in terms of fostering cooperation between stakeholders, raising awareness of the benefits of ITS and the obstacles to deployment, as well as the progress made especially in view of ensuring interoperability (through the definition of standards and specifications), should be compared to the overall limited dedicated resources allocated to the Action Plan. The Action Plan has been very ambitious; dedicated resources, on the contrary, have been limited.

7. RELEVANCE

7.1 Appropriateness of the Action Plan and actions to needs

This section addresses the following evaluation question:

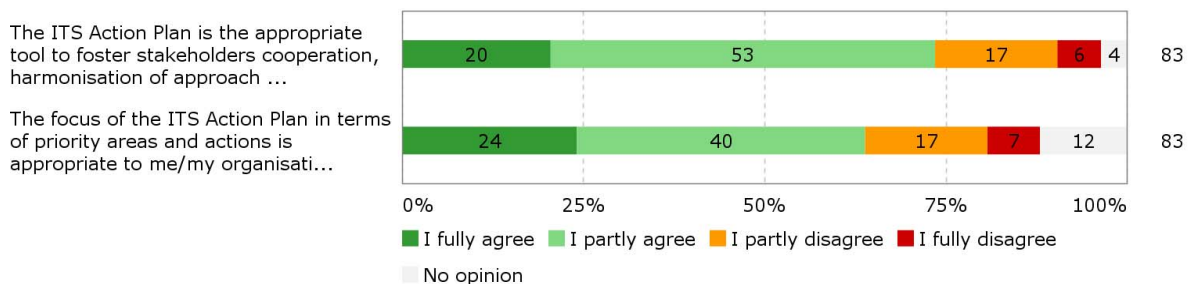
- **EQ10: To what extent have the actions undertaken so far been appropriate to needs in view of fostering the deployment of ITS in Europe?**

The sources of evidence included the full set of data: online survey and interviews at the Action Plan level, as well as aggregate findings resulting from the analysis of all actions (interviews, online survey and desk research at the action level).

7.1.1 The Action Plan overall

In the online survey, stakeholders were asked to assess whether the ITS Action Plan, as a tool and in terms of its focus and priorities (actions and priority areas) and in view of fostering deployment of ITS in Europe, was relevant to their needs. Overall, the stakeholder feedback was positive.

Figure 27, To what extent do you agree with the following statements on the relevance of the ITS Action Plan so far?



The Action Plan as an instrument

All interviewees involved in this evaluation acknowledged the necessary leadership of the European Commission in the area of ITS in Europe. The need to address the market failures that occur in deploying ITS solutions was acknowledged. Only in a few isolated and specific cases did stakeholders believe that the European Commission should not intervene because the market would be able to successfully develop solutions on its own. One example was Action 1.1, where data providers unsurprisingly considered that the European Commission should let private operators take initiatives in the area of traffic and travel information. However, this did not reflect the views of the whole community of stakeholders.

In the survey (see Figure 27 above), a large majority of survey respondents (73%) agreed that the Action Plan was an appropriate tool to foster stakeholder cooperation, harmonisation of approaches or standardisation of technologies/processes.

Open comments to the survey and interviews with stakeholders indicated that stakeholders saw a need for clear policy orientations, coordination and, if necessary, top-down steering at the EU level. Stakeholders saw the Action Plan as a relevant framework, in the sense that it establishes a list of common priorities for concerted actions. As mentioned by one stakeholder interviewed, for instance, *"before the Action Plan everything was dispersed. The Action Plan took everything that was going on in one place and made it clear what direction things were moving into"*.

The appropriateness of the Action Plan as a strategic framework was challenged by a few survey respondents and interviewees. According to them, the ITS Action Plan did not fully address needs in a sense that it was too technical, too consultant-driven, and lacked a focus on the policy level. However, this point of view must be somewhat mitigated by the fact that some other respondents and interviewees were critical because they believed there had been too much talk and not enough actions in favour of ITS deployment. A good balance needed to be struck between strategic considerations and practical issues, and there was no strong indication that the Action Plan was the appropriate tool in this respect.

The survey results, in particular, indicated some confusion among respondents between the Action Plan and the Directive. A significant number of respondents mentioned the ITS Directive as a great success because it moved ITS up in the policy agenda of the Member States and provided strong incentives to governments to take action and contribute to the deployment of ITS. Such views indicated a good complementarity between the ITS Action Plan and the Directive, since the latter provides the platform for the Member States (through the ITS Committee) and stakeholders (through the ITS Advisory Group) to discuss and possibly align their ITS Strategies and actions, while also giving the European Commission the ability to adopt delegated acts for specifications in accordance with Article 290 of the TFEU.

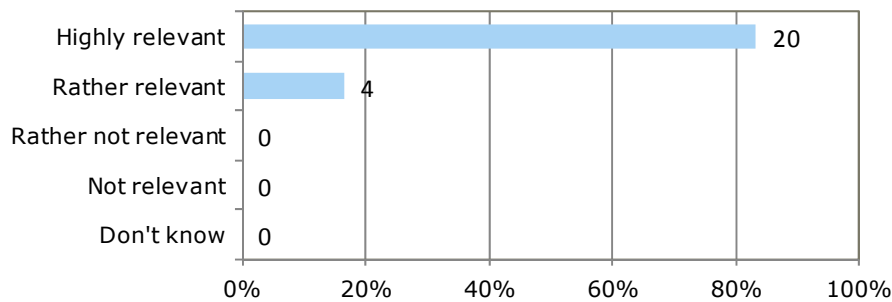
The objectives of the Action Plan

In the survey (see Figure 27 above) it can be seen that a majority of survey respondents (64%) fully or partly agree with the statement that the focus of the ITS Action Plan in terms of priority areas and actions was appropriate to them or their organisation's needs in view of fostering ITS deployment (24% of the survey respondents disagreed, while 12% did not know). This is, overall, a positive result, although it is not fully consistent with the conclusion of the assessment at the action's level, which was overwhelmingly positive (see below).

Looking at survey answers according to the respondents' profile, little variation was observed across respondent groups. The overwhelmingly positive answers from stakeholders involved in eFreight (50% fully and 50% partly agreed that the focus of the ITS Action Plan was appropriate to their need) and in smart ticketing (33% fully and 53% partly agreed) should be noted.

The specific objectives of the Action Plan, in terms of fostering the use of road, traffic and travel data, interoperability, interconnection and continuity of services, deployment of road safety and security ITS solutions, legal framework for deployment and better cooperation and coordination, were never put into question by any interviewee. They were all confirmed as relevant objectives, addressing the right drivers to deployment.

The analysis of Actions (consultant's assessment based on triangulated information from desk research, interviews with key stakeholders, the European Commission and survey results at the actions level) indicated that the objectives of the actions was highly relevant in 20 Actions and rather relevant in 4 actions. This was a highly positive outcome, indicating that all actions correspond to needs to a very high extent in view of fostering the deployment of ITS.

Figure 28, Relevance of the objectives of the actions

The few actions assessed as rather relevant “only” were Actions 1.2, 1.5, 2.4 and 4.1, for individual reasons explained on a case-by-case basis below.

The highly positive assessment of the relevance of the priorities and objectives of the ITS Action Plan can be explained by at least two elements:

- A careful analysis of problem drivers to ITS take up was conducted as part of the impact assessment¹⁴⁴ for the ITS Action Plan. The conclusions of this analysis have proved to be accurate and they were echoed by the interviewees and survey respondents as part of the present evaluation.
- The Action Plan has proven to be very - or maybe even too - ambitious (see section 4.3), in the sense that it tried to address all possible drivers to ITS deployment at once. This lack of prioritisation and focus was detrimental to its implementation, but in the meantime it provides a comprehensive and hence highly relevant framework to address ITS deployment.

Discontent expressed by a minority of stakeholders usually did not relate to the objectives of the Action Plan and its actions as such, but more to the fact that some did not find their views sufficiently represented in the work (see section 4.3, where the diversity of stakeholders was mentioned as a difficulty with respect to the implementation of the Action Plan), or did not find any direct use of the work achieved so far (an issue also discussed in section 4.3).

7.1.1.1 Action Areas

Action Area 1 - Optimal use of road, traffic and travel data

Action Area 1 was highly consistent and included actions that focus on the collection, exchange and use of traffic data by operators. This Action Area overlaps with priority actions (a), (b) and (c) of the ITS Directive that enables the European Commission to adopt specifications.

The objectives of the actions in Action Area 1 were assessed as highly relevant overall. Out of five actions, three were assessed as highly appropriate (Actions 1.1, 1.3 and 1.4) and two as rather appropriate (Actions 1.2 and 1.5).

According to all sources, one of the most important issues with regards to ITS deployment was (still) the collection and exchange of (and access to) traffic data. In this regard, Actions 1.1, 1.3 and 1.4 were assessed as highly appropriate, since they directly address a horizontal prerequisite for enhanced interoperability and the development of new applications.

¹⁴⁴ SEC(2008) 3083, 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 for interfaces with other transport modes - Impact Assessment, Brussels, 16.12.2008

Action 1.2, on the collection and provision of road data, also addressed this horizontal issue of the collection and provision of road data (including traffic circulation plans, traffic regulations and recommended routes, in particular for heavy goods vehicles). In the assessment of the stakeholders, the action was seen as relevant but less urgent compared to the other actions in this area. In this regard, stakeholders did not show a strong commitment to the implementation of this action.

Action 1.5, on the development of national multimodal door-to-door journey planners, was a particular case. The full realisation of the action's vision of having a fully operational national door-to-door journey planner required a combination of digital maps, travel data, and safety information. Only then would the different elements be in place for a truly multimodal journey to be planned. The findings of the evaluation showed that the objective of the action, as such, was considered appropriate. The deployment of multimodal journey planners was focused on the regional or local levels, especially since there was an increasing need for a focus on co-modality and on modal shift. Due to the fact that stakeholders lacked the sufficient motivation to expand services on a European scale and preferred to deliver local or regional services (due to a lack of readiness of the market, difficult access to complete and accurate data, etc.), the action was assessed to be rather relevant.

One issue frequently mentioned by the interviewees and deemed to be insufficiently addressed by the current actions within Action Area 1 was the quality of data. The stakeholders tended to believe that the conditions were not fulfilled to ensure the quality of data, while only data of sufficient quality could be used in an effective way. This called for new actions to define the optimal quality level of the data, as well as the monitoring and measurement methods.

Action Area 2 - Continuity of traffic and freight management

Action Area 2 consists of a set of various measures focusing on interoperability, continuity of services, and ITS solutions for traffic and freight management. The approaches used for the actions varied to a high extent across actions.

The objectives of the actions in Action Area 2 were assessed as highly relevant overall. Out of five actions, three were assessed as highly appropriate (Action 2.1, 2.2 and 2.3), and one as rather appropriate (Action 2.4).

Actions 2.1 and 2.3 focused directly on interoperability issues. Action 2.1 provided a broad mandate for facilitation of continuity of ITS services to the European Commission, while Action 2.3 tried to define common ITS architecture frameworks. Stakeholders acknowledged the need to support interoperability and the continuity of services in a context marked by a large number of players who locally develop and implement different ITS solutions.

In both Action 2.1 and 2.3, the urban dimension was assessed as particularly relevant, as there seemed to be a steadily growing interest in urban ITS in Europe. This called for enhanced actions in this already, although there was some uncertainty as to the extent to which the European Commission can act within the principle of subsidiarity.

In the context of Action Area 2, multimodality was also seen as an important dimension, rightfully tackled by Actions 2.2 and 2.3. In this respect, after dispersed progress (mainly through FP7 funded projects), Action 2.2 on E-freight was getting momentum with a renewed, cross-modal initiative from the European Commission in 2013.

Finally, although the objective of electronic road tolling deployment was not criticised, it was difficult to see whether EU-wide deployment was possible. Overall, stakeholders tended to think that EETS was relevant because they declared readiness to deploy, but they also wanted to see a clear business model but limited progress was observed. Because of these reservations about EETS, the objective was assessed only as rather relevant.

Action Area 3 - Road safety and security

Action Area 3 consisted of a set of measures focusing on ITS applications for road safety. The approaches used for the actions varied to a high extent across actions.

The objectives of all actions in Action Area 3 were assessed as highly relevant.

Reasons differed from one action to another, but in general the assessment was positive because the actions directly addressed different aspects of road safety with clearly identified problems. The fact that the benefits of ITS were clearly seen could be a reason why stakeholders considered it highly relevant, and they had no reasons to challenge the set objective. This included Action 3.5 on secure parking places for trucks, although all stakeholders did not agree on whether a regulatory approach should be taken (see Action Plan call for "appropriate measures"); if a regulatory approach in this respect was sufficiently broad then it was accepted by all as relevant. This was intelligently used by the European Commission in Action 3.2, on eCall, which included an awareness raising campaign in its strategy to introduce the pan-European eCall.

In Action 3.5, on secure parking places for trucks, there was initially no consensus on the approach (there was a lack of a clear business case and stakeholders were reluctant to take a regulatory approach), but the need to optimise parking places, reduce dangerous parking and searching time for trucks was strongly supported by stakeholders in an impact assessment. Additionally, the fact that the ITS Directive included two priority actions (e and f) on this topic raised the priority level of this action.

The strong support received from stakeholders for most of these actions was also a good indication of their relevance. This was particularly the case in Actions 3.2 and 3.4, on ITS applications for vulnerable road users, where momentum was created among the stakeholders.

Action Area 4 - Integration of the vehicle into the transport infrastructure

Action Area 4 consists of a set of complimentary measures which focus on different aspects related to the integration of the vehicle into the transport system. The Action Area is strongly aimed at increasing interoperability on the long term through: the promotion of an open in-vehicle platform, the introduction of cooperative systems, the exchange of data between the infrastructure and the vehicle, as well as the action to take the necessary standardisation steps.

The objectives of all actions in Action Area 4 were assessed highly relevant overall. Three actions (Actions 4.2, 4.3 and 4.4) were assessed as highly relevant, while Action 4.1 was assessed rather not relevant.

Interoperability was, together with the collection and provision of data, a horizontal issue, and all actions strove to allow synergies and reduce the costs of introducing and operating ITS services.

Action 4.2, on the development and evaluation of cooperative systems in view of the definition of a harmonised approach, was seen by the European Commission as the corner stone of Action Area 4. It aimed to provide an evidence-based overarching strategy for the deployment of cooperative systems, which have gained importance since the launch of the ITS Action Plan in 2008.

Action 4.1, on the adoption of an open in-vehicle platform architecture for the provision of ITS Services and applications, was in principle highly relevant. However, the objective of adopting an universal open in-vehicle platform architecture was extremely challenging, and all stakeholders did not agree that this was a relevant target. This may call for alternative approaches, based on simple and effective means to enable interoperable services between heterogeneous platforms, or a mandatory single platform architecture for mandatory applications. At the very least, a carefully designed implementation strategy is needed.

A more general issue brought to the attention of the evaluator by one stakeholder concerned the scope of the mandates and activities within Action Area 4. Safety related applications have been the main output of the Mandate so far, and sustainability related applications should also be taken into account at some point.

Action Area 5 - Data security and protection, and liability issues

Action Area 5 consisted of two actions that addressed the legal consequences of enhanced ITS deployment.

All stakeholders agreed that data protection and liability issues could be a major barrier to market penetration of ITS services because they were a source of risk for the suppliers and a matter of concerns for the consumers and citizens. For both actions, their respective objectives were assessed highly relevant.

Action Area 6 - European ITS cooperation and coordination

Action Area 6 consisted of a set of actions aimed at improving the policy-making framework for ITS through enhanced decision-making processes and instruments, as well as cooperation between all parties involved at the European level.

All actions in Action Area 4 were assessed as highly relevant regarding their objective.

For Action 6.1, on the legal framework for European coordination on EU-wide deployment of ITS, stakeholders agreed that a strong and clear mandate to the European Commission was needed to effectively address interoperability issues and establish a sustainable regulatory framework by mean of specifications. The stakeholders' feedback on the selection of priorities and priority areas was also positive.

The need to raise awareness and support among policy-makers in relation to ITS was confirmed not only by the stakeholders consulted for the evaluation, but also by the difficulties of a number of actions due to the lack of evidence of the impact of ITS. The lack of a clear business case was mentioned in many actions as an obstacle to further deployment. Action 6.2, on the development of a decision-support toolkit for investment decisions in ITS applications and services, also encountered difficulties due to the lack of evaluation culture and evaluation material to support evidence-based policy-making. This calls for strong initiative in this area, since awareness among policy makers of the benefits of ITS is a condition to further deployment.

In this regard, Action 6.4 rightfully addressed the need to promote ITS initiatives in the area of urban mobility, where there is a growing interest in ITS as well as great potential for deployment. However, attention should be paid to the risks pertaining to uncoordinated deployment in terms of interoperability and continuity of services.

7.2 Needs and priorities for the future of the ITS Action Plan

This section addresses the following evaluation questions:

- **EQ11: To what extent have the needs and priorities evolved since the adoption of the ITS Action Plan in 2008?**
- **EQ13: What could be the possible threats/opportunities for the implementation of the ITS Action Plan in the future**

It also contributes to answering the following question (see also sections 8.1 and 8.2).

- **EQ12: To what extent should/could new or upgraded actions be envisaged to better address needs?**

It should be mentioned that very little data could be collected on EQ13. Hence, the section addresses EQ11 mostly, while data for EQ13 is also addressed when relevant.

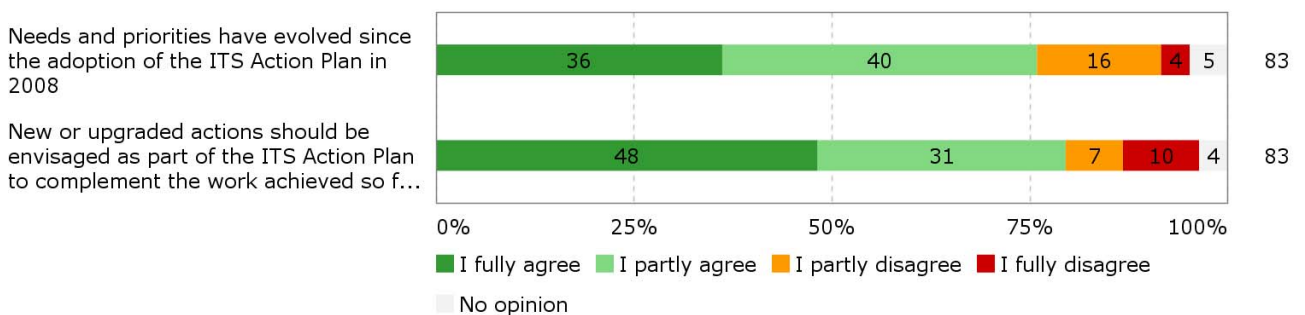
The sources of evidence included the full set of data: online survey and interviews at the Action Plan level, as well as aggregate findings resulting from the analysis of all actions (interviews, online survey and desk research at the action level).

7.2.1 Action Plan overall

Evolving needs

In the survey, stakeholders were asked if needs and priorities have evolved since the adoption of the ITS Acton Plan in 2008. As can be seen, a large majority of stakeholders considered that needs and priorities have evolved since the adoption of the ITS Action Plan in 2008.

Figure 29, To what extent do you agree with the following statements on the relevance of ITS Action Plan for the future?



In the survey and interviews, the major event that was always mentioned since 2008 was the economic crisis. The ITS Action Plan was conceived when more money was theoretically available for state sponsored development programmes. The Action Plan was not designed to rely solely on public investments, and the economic downturn did not fundamentally threaten the envisioned results. However, the crisis weakened the investment capacity of both the public and private operators. For this reason, it has become more important than ever to adopt a business model with ambitions related to the issues that can work and receive public support, providing sufficient incentives for the operators and users to invest.

In 2010, the European Commission issued the European Union’s ten-year growth strategy Europe 2020. The Action Plan remained highly coherent with the objectives set out in the strategy, and ITS should be further promoted as a relevant tool to achieve the EU’s strategic objectives.

Awareness and support among policy makers was more needed than ever in a context of scarce resources for public investment. The European Commission, with the support of the ITS community, must continue its effort of promoting ITS as a way of achieving cleaner, safer and more efficient road transport.

In the context described above, implementing actions based on the assumptions that ITS was a source of efficiency, security, sustainability, was not sufficient. Stakeholders demanded stronger evidence of the benefits of ITS, and stronger incentives to deploy ITS applications. This was striking, especially in the answers to open-ended questions in the survey, and requires building future actions on stronger business cases, pilot-testing, best practices and evaluation. As was seen in section 0, some actions that were striving to foster deployment of ITS applications have been struggling to find support from stakeholders because of a perceived lack of clear business cases (e.g. Action 2.4, on the implementation of the interoperability of electronic road toll systems, as well as Action 3.5, on the secure parking places for trucks).

Moreover, priority should be to enable economically viable solutions to develop and deploy. Thus, there is an increasing need to unlock the market by fostering open data and standard interfaces, and creating a stronger legal framework for privacy and security. Cooperative systems were also mentioned repeatedly as an area with high potential of deployment. These were priorities already identified in the Action Plan.

The technological environment is changing fast, though, and brings new opportunities and/or threats. The generalised market penetration of mobile devices and the organic growth of the mobile applications world were mentioned by a few stakeholders. More attention is needed there in order to identify the possible impact on ITS deployment. Changing technologies was also an issue frequently mentioned by stakeholders in actions relating to the definition of standards and specifications. This requires flexible approaches and constant monitoring and reviews.

Finally, interviewees and survey respondents indicated that interest in urban ITS and inter-modality is growing. These issues were being addressed at national levels, but more consideration for the EU level is needed in order to ensure interoperability and continuity of services. In this regard, the EasyWay project ends in 2013. The project was seen as a key enabling platform for interoperability and deployment aspects, and it should be continued. However, this is also an opportunity to think of how to ensure that urban ITS and inter-modality issues are addressed.

To conclude, the technological and economic environment for ITS is highly dynamic and stakeholders may consider that the needs and priorities have evolved. However, the situation depicted in the impact assessment has not fundamentally changed since the ITS Action Plan was launched. In particular, it is too soon to observe substantial tangible impacts of the Action Plan on ITS deployment, although there are indications that such impacts can be expected (see section 5.2). Current priorities are still highly relevant, but new or upgraded actions are definitely needed to promote ITS (including through evidence-based approaches) and support deployment.

Priorities for the future

The objectives set in the Action Plan, in the form of actions and Action Areas, have so far been highly relevant. When asked about their recommendations for future priorities (see also section 8.2 below), interviewees and survey respondents either mentioned issues already in the scope of the current actions and Action Areas, or they acknowledged that the current objectives and priorities were appropriate as they are and do not necessarily need changed.

As said, the highly positive assessment of the relevance of the priorities and objectives of the ITS Action Plan can be explained by accurate analysis and results of the impact assessment for the ITS Action Plan, which highlighted the main problem drivers to ITS deployment. In addition, the Action Plan has proven to be very ambitious (see section 4.3) in the sense that it tried to address all possible drivers to ITS deployment at once. This lack of prioritisation and focus was

detrimental to its implementation, but in the meantime it provided a comprehensive and relevant framework to address ITS deployment over the medium to long term.

Awareness and support among policy makers is needed more than ever in a context of scarce resources for public investment. The European Commission, with the support of the ITS community, must continue its effort promoting ITS as a way of achieving cleaner, safer and more efficient road transport.

In particular, as suggested by one respondent in the survey, the potential for ITS to achieve cleaner transport could be promoted further, possibly through earmarking actions contributing to this objective, or the definition of a new Action Area focusing on this particular benefit of ITS (similar to Action Area 3 on road safety and security). This would further anchor the ITS policy of the EU to the Europe 2020 strategy, issued two years after the start of the Action Plan.

In general, however, the analysis of current needs call for some changes, but they do not require any drastic shift in priorities in the short or medium terms. Rather, it suggests continuing the work within existing priorities set out in the Action Plan.

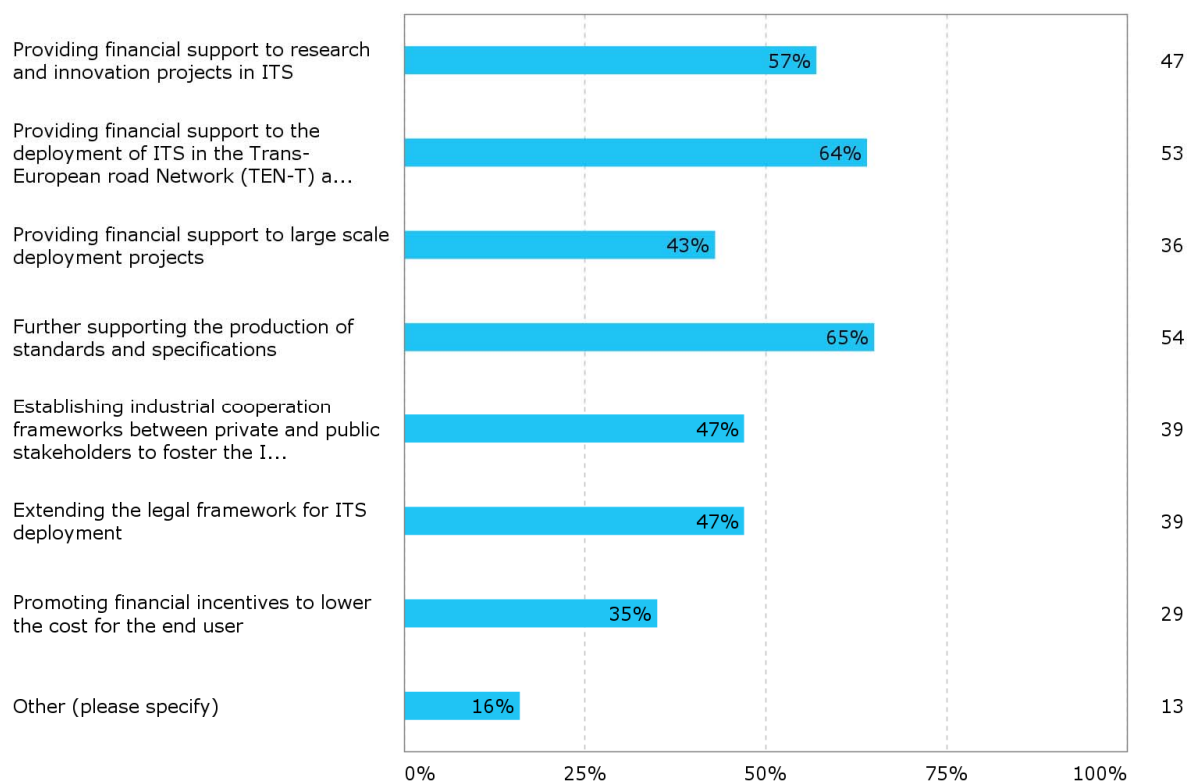
So, the short term focus should be on finalising the work initiated so far. This requires setting priorities within the existing Action Areas and actions in order to avoid dispersion of efforts and resources, as has been the case so far. In some instances, the operational objective of the actions must be refined or operationalised in light of the progress made or difficulties encountered.

Open-data and interoperability of systems and applications should remain high in the agenda, as they are the backbone of ITS issues. Technical specifications and standards are in this regard one of the policy instruments preferred by the stakeholders (see below). As little progress has been limited so far in this area, it also becomes crucial to identify and implement actions that will provide a secured and predicible environment for ITS providers and users.

The implementation of the ITS Directive should and will remain a priority for the European Commission services. Unless the mid-term evaluation of the ITS Directive surprisingly recommends taking a different course of action, it is not appropriate to reshuffle the cards and redefine the EU ITS policy in the short term. In the medium term, however, a new and highly integrated strategy for deployment, based on a EU roadmap and possibly a new directive, will be needed. Priorities and instruments will have to be reassessed in light of the progress made by then.

Policy instruments for the future

In the survey, stakeholders were asked which instruments should be given priority in the future. Results are show in Figure 30.

Figure 30, Which of the following instruments should be given priority in the future?

As can be seen from the survey results, further supporting the production of standards and specifications, providing financial support to the deployment of ITS in the Trans-European road Network (TEN-T) and cities, and providing financial support to research and innovation projects in ITS were the most preferred instruments for the stakeholder community. As such, this is an additional confirmation that the implementation approach has been relevant so far.

The relatively high support for standards and specifications indicate that stakeholders were optimistic regarding the potential positive impact of such instruments, despite the fact that during interviews and through open comments to the survey, concerns were raised with respect to the process of drafting such specifications. The evaluator believes that this result should provide confidence to the European Commission in pursuing standardisation and adopting specifications while making sure to employ a highly transparent and participatory process.

Meanwhile, stakeholders also indicated that an even stronger focus is needed on support to development (through R&D projects finance by EU research programme¹⁴⁵) and deployment (especially through TEN-T in the Trans-European road Network, or the European cohesion and structural funds for cities). The evidence collected highlight possibilities of improving coordination of, in particular, the EU funding instruments to support the implementation of the ITS Action Plan. This calls for an even better integrated approach with RTD on the one hand (upstream), as well TEN-T and Regional Funds (downstream) on the other hand.

Providing financial support to the deployment of ITS in the Trans-European road Network (TEN-T) and cities was not a focus of the ITS Action Plan, which was much more focused on the policy and awareness raising aspect. The support for such an instrument at this stage is unsurprising as future policy aimed particularly at increasing deployment of ITS would require a strong focus on financial instruments (public and private as well as EU and national/local).

¹⁴⁵ Horizon 2020 as of 2014

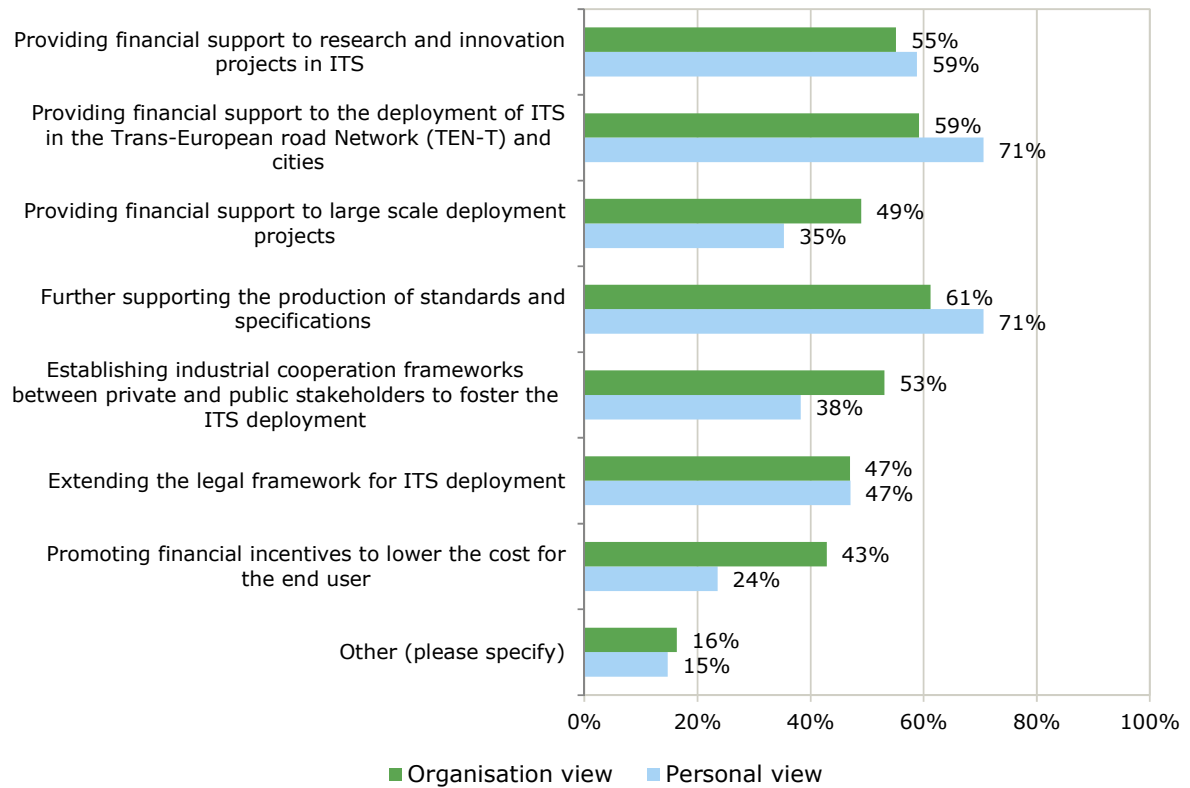
The stakeholder support for the other instruments was weaker, although three additional instruments received support from more than 40% of the respondents:

- Establishing industrial cooperation platforms between private and public stakeholders was also an instrument that received relatively good support from stakeholders. This support confirms an appetite of stakeholders to engage in such platforms, thus ensuring their effectiveness.
- Extending the ITS legal framework was also supported by 47% of respondents; however, this result was difficult to interpret due to the vague description of the legal instrument in the question. Some stakeholders found it hard to support legal measures when such options were not described in sufficient detail.
- Interestingly, stakeholders were careful when asking for financial support to large-scale deployment investment, probably understanding that the situation in public finances does not enable too ambitious of investment programmes.

Interestingly, some discrepancy can be noted when comparing the responses between those answering on behalf of their organisations and those answering on their personal views. The survey results indicate that respondents answering on behalf of their organisation are more inclined to diversify the type of instruments used in support of ITS deployment than those answering on their personal view. As seen in Figure 3:

- Organisations support more than individuals the use of the following instruments: Promoting financial incentives to lower the cost for the end user, establishing industrial cooperation frameworks between private and public stakeholders to foster the ITS deployment, and providing financial support to large scale deployment projects.
- Respondents answering on their personal views have a stronger preference the following instruments: further supporting the production of standards and specifications, and promoting financial support to the deployment of ITS in the Trans-European road Network (TEN-T) and cities; they are also heavily supported by respondents answering on behalf of their organisation.

Figure 31, Which of the following instruments should be given priority in the future? X Are your answers corresponding to your own personal view or are you responding on behalf of your organisation as a whole?



All in all, in line with the approach used until present, the use of a comprehensive set of complementary instruments was certainly the best way to approach the implementation of the Action Plan in the future, even as ITS policy moves closer to supporting actual deployment.

7.2.2 Action Areas

This section focuses on emerging needs and priorities within each Action Area. Recommendations for future priorities and actions are presented in section 8.2.

Action Area 1 - Optimal use of road, traffic and travel data

No major change was brought to the attention of the evaluator with regards to road, traffic and travel data since the adoption of the ITS Action Plan in 2008. In spite of the progress made in the framework of the Action Plan, all sources indicated that there was still a lack of validated, consistent and accessible data, and a lack of clear responsibilities for the provision, sharing or re-use of data and components. This calls for continued and strong actions in this area. Some called for a very ambitious open-data approach in this area, should it be by regulation.

However, the trend towards the utilisation of commercial sources was confirmed. This means that access to data remains an issue, but also that the interest of commercial traffic information providers has to be preserved in order to avoid hampering deployment through market forces. This issue was brought to the attention of the evaluation by private operators, both in the survey and interviews.

As noted above, there was an increasing concern with regards to the quality of data, which was seen as a prerequisite to data use and ITS deployment. This was, according to some stakeholders, not sufficiently addressed by the Action Plan.

Additional contextual issues mentioned include:

- The ITS Directive, adopted after the launch of the Action Plan, was a major contextual change for this Action Area. By providing a regulatory framework to adopt binding specifications under priority actions (a) and (b) and (c), the Directive supported and complemented the work undertaken in the Action Plan. This particularly concerned Action 1.1, 1.3 and 1.4, as well as Action 1.5.
- The EasyWay deployment guidelines set to be adopted in November 2012 contained harmonisation requirements and supplementary information for, inter alia, travel information services and data exchange (Datex II). This fell within the scope of Action 1.1. However, according to stakeholders (and especially the European Commission), it had no negative impact on the relevance of the action and the work undergoing with the ITS Directive, since the guidelines lack enforcement power, contrary to specifications.
- With regards to Action 1.4, one concern mentioned by one of the interviewees regarded technological development, which carries the risk of potentially basing specification on outdated technologies if technological neutrality would not be ensured. No further details could be collected, but it has to be acknowledged that this was an issue that needs to be constantly taken into account. This calls for technology monitoring and fitness checks.¹⁴⁶
- The European Commission adopted a technical specification for interoperability (TSI) for telematics applications for passenger services (TAP) in May 2011. They defined European-wide procedures and interface between all types of railway industry actors and contributed to an interoperable information exchange system for Europe that enables the provision of high quality journey information and ticket issuing to passengers in a cost effective manner.

Action Area 2 - Continuity of traffic and freight management

No fundamental change was brought to the attention of the evaluator in this area. Individual solutions were still being deployed at regional or local levels and the technological spectrum remained fragmented. In this respect, interoperability of systems and pan-European deployment of ITS solutions for traffic and freight management remain topical issues to be addressed.

As already mentioned above, Action Area 2 was marked by a number of parallel initiatives implemented in parallel to the Action Plan that must be taken into consideration:

- In the scope of Action 2.1, EasyWay developed new deployment guidelines (the 2010 and 2012 Guidelines), which established a common framework for this deployment. The guidelines however did not preclude the European Commission to act, since the guidelines did not cover all issues identified in the scope of Action 2.1. The 2012 EasyWay deployment guidelines mainly took the perspective of road operators (national, regional and motorway companies), and if continuity across borders was taken into account, the urban/interurban intersection and the continuity across modes were not necessarily covered to a sufficient extent, hence inviting for new, complementary actions in this area. A first step could be a systematic assessment of the new guidelines that define the way forward accordingly.
- In the scope of Action 2.3, the E-FRAME project was started at the same time as the Action Plan with the aim to extend the European ITS Framework (FRAME) architecture to include cooperative systems. The focus of the FRAME architecture was mainly road, but it covered a number of aspects relevant to the Action Plan, and it could potentially be a cornerstone of a multimodal FRAME architecture for intelligent transport systems and a FRAME architecture for urban transport mobility. As the next step, the evaluator advises

¹⁴⁶ On "fitness checks", see Secretariat General of the European Commission:
http://ec.europa.eu/dgs/secretariat_general/evaluation/docs/fitness_checks_2012_en.pdf

the European Commission to assess the appropriateness of the FRAME and E-FRAME to answering its policy objectives and decide on future measures accordingly.

In the area of E-Freight and Action 2.2, the European Commission was preparing a broad cross-modal initiative on e-Freight, in light of what the objective of the action needs to be redefined. In addition, recent technological developments need to be taken into account in the future in order to benefit from new opportunities (e.g. GPS technology is becoming increasingly important) and avoid the risk of using outdated technologies (e.g. plain messages rather than opening up the network and publishing services).

No new developments were observed in the area of EETS, but the lack of progress in deployment called for a pause or a renewed strategy.

Action Area 3 - Road safety and security

A limited number of emerging issues were brought to the attention of the evaluator in the scope of this Action Area. As noted, remarkable progress was made within the support of the Action Plan. For instance, the installation of advanced emergency braking systems (AEBS) and lane departure warning systems (LDWS) in heavy-duty vehicles became mandatory in the EU (Action 3.1); eCall was entering its deployment phase and will soon be available for citizens (Action 3.2). However, the great potential of ITS-based road safety and security applications remains underexploited.

In the scope of Action 3.4, the issue of vulnerable road users remained an essential topic to be addressed as part of safety on roads, especially in light of ageing population and transport objectives that promote modal shifts and more pedestrians and cyclists on the road.

Since the launch of the ITS Action Plan in 2008, nomadic devices continued to be developed at a steady pace. Increasing use of such devices changed the way people interact with technology. Moreover, there have been technological advances on what these devices can achieve, and their "intelligence" has developed tremendously since 2008. These are factors that increase the relevance of Action 3.3 in particular, and call for continued initiatives in this area, although not necessarily in the form of a regulatory framework. The work in this area should also take into account the conclusions of the eSafety (iMobility) working group on HMI, as well as the progress made in the US to develop guidelines on the basis of the European Statement of Principle (ESoP). An assessment on whether the latter needs to be updated in light of the recent technological developments is relevant.

More generally, the development and use of mobile devices constitute a source of great opportunities in the area of ITS that need to be further exploited.

Action Area 4 - Integration of the vehicle into the transport infrastructure

Only one contextual change was brought to the attention of the evaluator in the scope of Action Area 4. It concerned the rapidly changing technological environment. Standards based on outdated technologies may slow down innovation, and for this reason standards should not only be designed to address current needs, but also to anticipate future needs and technologies and offer long-term solutions.

Action Area 5 - Data security and protection, and liability issues

No fundamental change was observed since the launch of the ITS Action Plan in 2008, and data security and protection, and liability issues remained obstacles to ITS deployment.

The continuous increase of automation and use of telematics systems in transport require a revision of the legal framework, or at least careful compliance with the existing one. Recent developments, including in the scope of the ITS Action Plan (e.g. Advanced Driver Assistant

Systems (ADAS), eCall, Human Machine Interface (HMI), cooperative systems), call for prompt initiatives.

A relevant development that took place and already taken into account in the implementation of Action 5.1 was the completion of the FP7 research project PRECIOSA. The Privacy Enabled Capability in Cooperative Systems and Safety Applications (PRECIOSA) delivered its results in November 2010. The project showed that cooperative systems can comply with future privacy regulations through technical solutions, as an application can be endowed with technologies for suitable privacy protection of the location related data of individuals.

Action Area 6 - European ITS cooperation and coordination

The implementation of the ITS Directive caused a major change in the wider context of the ITS Action Plan. However, fundamental issues diagnosed at the time of the launch of the impact assessment prevail.

The highly dynamic technological context requires the development of specifications in new areas and actions. The increasing development of ICT and mobile technologies and their interaction with mobility and ITS services, as well as the growing importance of cooperative systems for ITS, are major trends that should be addressed.

The economic downturn reduced the investment capacity of the public authorities. This is of course a challenge, but also an opportunity to promote ITS deployment as an efficient way of improving the quality and capacity of the transport system. This can be done by gathering evidence of the impact of ITS and promoting ITS infrastructures and services as efficient alternatives to heavy investments. As said by one interviewee, "it is much more attractive for a politician to cut a ribbon on a new road than to press a button and deploy an ITS solution". A proactive approach is needed.

7.3 Conclusion

The need to address the lack of deployment of ITS in Europe was acknowledged by all stakeholders. Clear policy orientations, coordination and top-down steering at EU level is needed.

The Action Plan was seen as a relevant framework, in the sense that it established a list of common priorities for concerted actions. However, a good balance needs to be found between addressing technical issues and involving policy-makers in ITS deployment. The objectives of the Action Plan, in terms of actions and Action Areas, have been highly relevant so far. Reasons were: a careful analysis of problem drivers to ITS take up was conducted as part of the impact assessment; the situation depicted in the impact assessment has not changed significantly since the launch of the Action Plan; and the scope of the Action Plan was large and addressed all major obstacles to ITS deployment.

The needs and priorities have not significantly changed since the launch of the ITS Action Plan in 2008. Yet, Mobile devices and applications, urban ITS and inter-modality are rising issues that require further attention for the future.

The economic downturn since 2008 was the major issue impacted the stakeholders' needs the most. State sponsored deployment is not a relevant model anymore, and focus should be on issues that provide benefits to the public and incentives for the operators. Stakeholders, in particular policy-makers, demand stronger evidence of the benefits of ITS and stronger incentives to deploy ITS applications. This requires building future actions on stronger business cases and better identified benefits.

Priority to economically viable solutions requires redoubling efforts on unlocking the market by fostering open data and standard interfaces, and creating a stronger legal framework for protecting privacy and increasing security.

8. CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

Based on the previous analysis, this section presents an answer to each of the evaluation questions set in the terms of reference of the study.

EQ1: What is the actual progress status of the implementation of the ITS Action Plan?

Overall, the implementation of the Action Plan is well advanced: four actions have been completed and a significant proportion of the ongoing actions are close to completion. In general it can be said that the work is either completed or over 50% completed for the majority of the actions.

Most ongoing actions are experiencing delays. The delays are motivated, for the most part, by the fact that the Action Plan's objectives were overly ambitious in relation to the complexity of the area in which they seek to have impacts, as well as to the human resources dedicated to the task of implementing the ITS Action Plan.

Delays and suspensions were, in a number of instances, voluntary due to the desire to ensure complementarities with other policies (e.g. Actions 2.1, 2.3, 6.3).

A number of actions lacked a sufficiently defined work plan and final output, resulting in uncertainty and a lack of visibility and clarity for both the European Commission and stakeholders.

EQ2: To what extent is the ITS Action Plan known and its progress followed/reported among the ITS stakeholder community?

A strong characteristic of the ITS Action Plan is that it builds heavily on the various ways of participation of stakeholders in all actions.

Overall, for sufficiently advanced actions, the ITS Action Plan is known and its progress reported and followed among the ITS stakeholder community. The evaluation results showed that survey respondents and, more generally, the ITS Community are aware of the ITS Action Plan, its content and its progress.

Stakeholders do not fully acknowledge the considerable efforts made by the European Commission to involve stakeholders, demonstrated by the fact that they considered the ITS community to not always be sufficiently involved. Some stakeholders criticised the fact that only "selected"

stakeholders are involved, mostly from the industry. This can be seen as a consequence of the difficulty in addressing a great diversity of stakeholders.

For some actions, the actual level of stakeholder participation was below expectations set by the European Commission in the planning phase of the action. The perceived lack of involvement by the entire stakeholder ITS community was raised as an issue by a number of survey respondents and interviewees.

Generally, the European Commission made considerable efforts to disseminate the results of the sufficiently advanced actions. For some actions, dissemination was limited to a publication on a website and a presentation in an event, and as such was probably insufficient to generate results.

Stakeholders indicated that the communication on the ITS Action Plan was not always sufficiently clear. Insufficient understanding with respect to the progress and the expected final outcomes was reported by the community, reflecting the lack of clear goals and work programmes at the action level.

EQ3: What were the main successes/positive elements with respect to the implementation of the ITS Action Plan?

The main successes/positive elements with respect to the implementation of the ITS Action Plan were:

Good cooperation and involvement of the various stakeholders was ensured during the course of implementation of the ITS Action Plan.

The positive contribution of the ITS Directive and the ITS Action Plan to **increase awareness of ITS** was considerable

The ITS Action Plan served as a roadmap and is currently providing a **structuring role** for work conducted in support of ITS development and deployment.

The quality of the deliverables and outputs was overall assessed positively by the interviewees.

It was said that studies provided **valuable baseline information** and recommendations.

The overall design for implementation of the actions was appropriate, and the European Commission's role as a coordinator, facilitator and moderator was appreciated by stakeholders.

The implementation of the Action Plan successfully took into account **parallel initiatives** and policies, and as a result achieved **synergies and complementarities** while avoiding the duplication of efforts.

EQ4: What have been/are the main difficulties/issues in implementing the ITS Action Plan?

The main difficulties/issues in implementing the ITS Action Plan and regarding specific issues on **the overall management of the Action Plan**:

Most actions were delayed and a number of actions experienced major delays (e.g. Actions 1.1, 4.1). As a result of this, a number of ongoing actions lack a precise planned date of completion and it is

not planned for the majority of actions to produce intermediary outputs and/or milestones. For some of the actions experiencing delays, **an updated planned date of completion has not been set.**

The planning and overall management of actions was assisted by a number of managerial tools for each action, such as action fiches, and an overall monitoring tool. However, this evaluation found that these **tools were not actively used and were insufficiently updated.**

A number of actions had objectives that were either open-ended or open to interpretation. As a result, the **final output of those actions is unclear**, creating confusion for stakeholders who find it difficult to develop a clear position on the action, as well as creating difficulties with respect to implementation of planning and timing.

Most study reports prepared and published under the Action Plan included recommendations, but the **necessary steps to ensure their follow up** were not anticipated by the action leader, leaving a gap in the action's implementation (e.g. Actions 3.4 and 5.1; on the former, some of the conclusions of the study were used for the preparation of an FP7 call). This resulted in "stand alone studies".

A few actions experienced difficulties in actively involving stakeholders to the expected and desired extent.

The Action Plan was overambitious both in terms of scope and timing. Obviously, this was detrimental for the European Commission to meet its targets, and **the allocated human resources proved to be insufficient.**

Another difficulty identified was the insufficient definition and research into **clear business cases for deployment**, which was detrimental to stakeholders' willingness to cooperate in deployment efforts.

Apart from concerns regarding the project management and the large number of currently delayed actions (in terms of the timing set in the Action Plan), there was no major recurring difficulty or issue concerning the implementation of the Action Plan. **Obstacles tended to be specific to each action**, which by itself can be interpreted as a positive sign.

EQ5: How can/should the implementation of the various actions be improved?

In terms of implementation, a number of recommendations specific to each action were formulated. They can be found in the action sheets in Appendix 5.

To improve the implementation of the various actions, a number of horizontal recommendations were formulated that build on the positive aspects as well as the lessons learned from the difficulties encountered in the implementation of the ITS Action Plan so far:

- The ITS Action Plan was built around a strong participatory approach with respect to engaging stakeholders in the work. This approach should be maintained and enhanced, especially in the process of drafting specifications, impact assessments and setting the ground for future policy measures. For specific actions, the establishment of a stakeholder platform is recommended (see section 8.2).
- In line with the horizontal strategy of a participatory approach for stakeholders, dissemination activities are very important, The European Commission should make sure that the website is regularly updated with the results of studies, minutes from public meetings and workshops, updated work plans, etc. More specifically, in the preparation of

workshops, participants should be sent the material beforehand in order to have the time to study it prior to the meeting and to be in a position to actively contribute to the discussion.

- For management and communication purposes, a number of actions would benefit from a better defined work plan. This is especially important for the delayed actions and for actions with unclear final outputs or an “open ended” interpretation of operational objectives. The revised work plans should be built around realistic targets in terms of timing that take into account limitations relating to the availability of human resources.

EQ6: To what extent has the adoption and implementation of the ITS Action Plan raised awareness on the barriers to the deployment of ITS in Europe?

The stakeholders’ assessment on the contribution of the ITS Action Plan to awareness raising was overwhelmingly high.

Overall, it was clear that one of the major contributions of the Action Plan was how raised awareness on the barriers of ITS in Europe by bringing ITS to the table of decision makers and to an audience outside the “normal” ITS community. It also raised awareness by generating debates and discussions and by sharing knowledge within the stakeholder community. The involvement of different parties representing diverse views and given a framework and a forum to discuss and share also contributed to raising awareness on the existing barriers to ITS deployment.

Stakeholder opinion is that the Action Plan contributed toward a larger involvement of the political spectrum, although they feel more efforts are still needed in this area.

In this respect, all interviewees agreed that the ITS Action Plan, along with other initiatives supported by the EU such as Easyway and the implementation of the Directive, contributed greatly to increased awareness of the barriers to deployment of ITS and to its potential benefits.

However, the picture is less homogeneous when looking at the action level.

Most of the actions involved stakeholder and dissemination activities, and in this regard contributed highly or to some extent to raising awareness among the stakeholder community. Very importantly, the activities involved those beyond the “usual” actors normally involved in the topics.

One striking example is Action 3.2, which included an awareness raising campaign on e-Call. Another good example is Action 3.4, where stakeholders got highly involved in the FP7 call for proposals in the area of vulnerable road users.

Actions assessed as having an insignificant impact on awareness on the barriers to and the benefits of ITS were mainly those not yet well advanced. Some actions found difficulties in involving the broader stakeholder community, and in this respect failed to increase interest of the stakeholders in the relevant issues (e.g. Actions 4.4 and 5.2).

EQ7: To what extent have the actions undertaken so far contributed toward achieving the objectives of the ITS Action Plan?

Achievement of the operational objectives

Generally speaking, for the actions that were implemented and now considered completed, the operational objective was fully achieved. This concerns four actions (Actions 1.5, 4.4, 6.2, 6.3 and 6.4). The result was mostly consistent with the progress status presented in this report, although small discrepancies did exist (e.g. Action 6.2, which is considered ongoing because, although the

Evaluator assessed the objective, from the way it was formulated, as met, the European Commission envisioned more work to be done).

Understandably, for most of the “ongoing” actions, the operational objective has not been met and is not expected to be in the near future.

Follow-up and uptake

In the intervention logic of the ITS Action Plan, described in section 2.1.1 of the report, the ability of the Action Plan to produce effects and impacts is linked to the process of follow-up and uptake of actions and results. The present evaluation specifically looked into whether actions are being (or expected to be) followed-up and whether results are being taken up by stakeholders.

The findings of this evaluation are overall positive with respect to the levels of follow-up and uptake.

Follow-up activities at EU or national levels are already taking place for ten actions. They include, for instance, the development of specifications under the ITS Directive (e.g. Actions 1.1, 1.4, 6.1), follow-up work conducted by the iMobility forum (Actions 1.3, 3.4),¹⁴⁷ AETIS (Action 2.4),¹⁴⁸ eMaps (Action 1.3), Easyway (Action 2.1), or continuity in long-term actions (Actions 2.2 – eFreight and Action 3.2 (eCall)).

Follow-up is expected in the short-term for another five actions. This includes, for instance, likely follow-up of study recommendations by the European Commission (Actions 1.2, 5.1) and the continuation of work announced by other organisations (e.g. ERTICO in the case of Action 6.4).

The results (final or intermediary) of eight actions have already been taken up and the results of an additional two actions are expected to be taken up soon. Uptake includes situations where an actual deliverable conducted under the Action Plan is being used in follow-up activities (e.g. for the use in drafting specifications) as well as situations where the industry is already taking into account ongoing work for the definition of specifications.

This is, overall, a positive result, taking into account the degree of advancement of implementation of the Action Plan.

Contribution to enhanced deployment of ITS in Europe

As the Action Plan is currently ongoing, a large number of actions have yet to show effects in terms of deployment of ITS.

Overall, evidence shows that positive impact can be expected in terms of interoperability of applications and systems and continuity of services in the EU, but more limited in terms of solving privacy and liability issues. In the view of the survey respondents, however, the diminished contribution to addressing unsolved privacy and liability issues is not detrimental to the overall Action Plan’s contribution to the deployment of ITS in the EU.

¹⁴⁷ The iMobility Working Group on Vulnerable Users is a follow-up initiative taken by stakeholders. The VRU WG aims at creating a forum encompassing stakeholders in the area of Vulnerable Road Users safety enhancement, and at supporting a similar objective as the action 3.4 of the Action Plan. In this regard, the WG is willing to be involved in the further elaboration and application of appropriate measures for VRU

¹⁴⁸ Around 10 companies, potential EETS providers, have created an association for Electronic Tolling and Interoperable Services (AETIS). AETIS gathers interest groups and stakeholders in the process of setting up and maintaining EETS.

Despite the early stage in the completion of the ITS Action Plan, evidence of impacts, although still anecdotal, can be identified in some cases. The analysis showed that the Action Plan is contributing to:

- The area of cooperation and coordination, was identified as the highest contribution of the ITS Action Plan to ITS deployment. Evidence exists that nine actions have so far contributed to a high (Actions 1.3, 3.2, 6.1 and 6.4) or to some (Actions 1.1, 2.4, 3.1, 3.4, and 4.3) extent to cooperation and coordination. This is probably a conservative assessment, as more actions potentially had an effect in this respect through the considerable efforts of stakeholder involvement and participation.
- There is some evidence that five actions contributed to a high (Actions 3.1, 3.2 and 3.4) or to some (Actions 1.5 and 4.3) extent to the development of new applications. Limited evidence of contribution to the development of new application was identified for four actions (Actions 2.2, 2.4, 4.2 and 6.2). The large majority of actions (14 actions) have not shown any evidence yet of fostering the development of new applications.
- Six actions have contributed to some (Actions 1.5, 4.3) or to a limited extent (Actions 2.2, 2.4, 4.2, 4.4) to the technical interoperability of ITS services. The large majority of actions (11 actions) have not shown any evidence yet towards increasing the interoperability of ITS services.

Contribution to cleaner, safer, more competitive and more efficient transport in Europe

Limited evidence of socio-economic impacts can be identified. The analysis of individual actions revealed that large scale deployment must still take place, and without it, no socio-economic impacts will take place. However, with respect to the economic, social and environmental impacts of the ITS Action Plan, around 70% of the survey respondents positively assessed the Action Plan's contribution to supporting traffic management and the interconnection of transport modes and to improving road safety.

At the opposite spectrum, only 44% of respondents agreed with the statement that the Action Plan contributed to reducing congestion, while 46% and 48% agreed that the Action Plan contributed to the increase in competitiveness of the EU transport sector and to environmental issues (such as CO₂, air quality and noise), respectively.

A significant percentage of respondents issued no opinion for some of the suggested socio-economic impacts. This result, in itself, indicates that a large number of respondents were not able to identify any evidence in support or against the statements.

Sustainability

Generally, all else held equal, the outcomes of a significant number of actions that were able to be assessed were found to be rather or highly sustainable. Only two actions (Actions 6.2 and 6.3) were deemed unsustainable and rather not sustainable, respectively, as opposed to eleven actions assessed to be rather (Actions 1.1, 1.2, 1.4, 1.5, and 3.4) or highly (Actions 1.3, 3.1, 3.2, 4.2, 4.3, 6.1) sustainable.

It is however too soon to infer any definite judgement on the sustainability of the outcomes and impacts of the ITS Action Plan. These findings reflect mainly the stakeholders' expectations or opinions.

EQ8: To what extent should/could new or upgraded actions be envisaged to complement the work achieved so far?

See EQ12.¹⁴⁹

EQ9: To what extent have the actions undertaken so far been efficient and their (expected) effects achieved with reasonable resources?

The contribution of the Action Plan, in terms of fostering cooperation between stakeholders, raising awareness of the benefits of ITS and the obstacles to deployment, as well as awareness of the progress made for ensuring interoperability (through the definition of standards and specifications), should be compared to the overall limited dedicated resources allocated to the Action Plan. The Action Plan was very ambitious; dedicated resources, on the contrary, were limited.

In terms of concrete deliverables, the outputs were generally achieved at a reasonable cost. More specifically, it was assessed that the studies conducted in the context of the Action Plan generally delivered very good value for money and were a cost-effective starting point for many actions.

It was not possible for stakeholders to identify more cost-effective approaches for producing the concrete deliverables and achieving the operational objectives of the actions.

The wider stakeholder community may have some concerns regarding the cost-effectiveness of the Action Plan. However, this proved to be more of an effectiveness issue than a cost-effectiveness issue because concrete outcomes are yet to be seen for most actions.

EQ10: To what extent have the actions undertaken so far been appropriate to needs in view of fostering the deployment of ITS in Europe?

The need to address the lack of deployment of ITS in Europe was acknowledged by all stakeholders.

The Action Plan was seen as a relevant framework in the sense that it established a list of common priorities for concerted actions.

In the view of the stakeholder, clear policy orientations, coordination and top-down steering at the EU level are needed. Stakeholders acknowledged the necessary leadership of the European Commission in the area of ITS in Europe.

The objectives of the Action Plan, at the level of actions and Action Areas, were found so far to be highly relevant. The main reasons behind this positive assessment were due to:

- a careful analysis of problem drivers for ITS take up conducted as part of the impact assessment;
- a fact that, as depicted in the impact assessment, the situation has not changed significantly since the launch of the Action Plan;
- the large scope of the Action Plan so it can attempt to address all major obstacles to ITS deployment.

¹⁴⁹ EQ8 and EQ12 derive from a single question in the Term of Reference of the evaluation. The two questions were developed for methodological purposes mainly. At this conclusion stage, they are addressed together.

However, a good balance must be found between addressing technical issues and involving policy-makers in ITS deployment.

EQ11: To what extent have the needs and priorities evolved since the adoption of the ITS Action Plan in 2008?

The needs and priorities have not significantly changed since the launch of the ITS Action Plan in 2008. However, since that date, a number of developments took place that affected the needs of the Action Plan in various degrees.

The major event since 2008 was the economic crisis. As a result of the scarcity of funding, deploying ITS solutions based on the assumptions that ITS is a source of efficiency, security, sustainability was no longer sufficient. Stakeholders demanded stronger evidence of the benefits of ITS and stronger incentives to deploy ITS applications before committing funds. In the context described above, priority should be given to enable economically viable solutions in development and deployment. State sponsored deployment is not a relevant model anymore, and focus should be on issues that provide benefits to the public and incentives for the operators.

The technological and economic environment for ITS is highly dynamic and stakeholders may consider that the needs and priorities have evolved. However, the situation depicted in the impact assessment has not fundamentally changed since the ITS Action Plan was launched.

Current priorities are still highly relevant, but new or upgraded actions are definitely needed to promote ITS (including through evidence-based approaches) and support deployment.

Interest in urban ITS and inter-modality is growing. These issues are being addressed at national levels, and more consideration for the EU level is needed in order to ensure interoperability and continuity of services.

A contextual development is represented by the emergence and generalisation of the use of mobile devices and smartphones. In order to identify the possible impact on ITS deployment and to take advantage of the developing trend, more attention could be given to the issue.

EQ12: To what extent should/could new or upgraded actions be envisaged to better address needs?

The Action Plan undoubtedly offered valuable support to foster ITS deployment, but it was not seen sufficient for ensuring large scale deployment. In spite of significant progress in terms of raising awareness and lifting obstacles to deployment (especially through better coordination of deployment activities in the ITS community, as well as technical harmonisation), results remain to be seen in terms of actual deployment.

In light of this, a first relevant question is whether continued action is needed and expected to be delivered. Overall, the answer is yes: the stakeholder community considers that a common policy framework and strong EU leadership was appropriate and still needed to make progress and foster deployment. Sustainability of the progress achieved so far depends on numerous factors, among which continuous European Commission support and monitoring of deployment activities is one of the most important.

A second question is what should be the priorities for the future. When asked, stakeholders made suggestions for recommendations that fit in the current priorities. This indicates that a major shift in

priorities is not needed. Instead, continuity was recommended- the European Commission should keep focusing on the current actions and priorities, and think mainly in terms of complementary development or deployment activities.

Better selected priorities are however needed in order to avoid dispersion of resources. So far, the large scope of the ITS Action Plan, combined with limited resources, resulted in slow progress and delays in a number of actions. In addition, for a number of actions that are (almost) completed, their actual contribution to deployment remains to be seen, possibly because follow-up actions are still needed in spite of significant progress made. Hence, in addition to the necessity of addressing current needs, better defined priorities are also required in order to ensure results in the medium term. Two (nonexclusive) approaches are possible:

- Strategic: high priority to actions that deemed to be key in fostering ITS deployment.
- Pragmatic: high priority to action that are well advanced and already demonstrating some results, in order to ensure that the low hanging fruits are picked up.

Major bottlenecks to ITS deployment remain and they should be addressed in priority in order to realise the full potential of ITS. In this respect:

- Open-data and interoperability of systems and applications should remain high on the agenda, as they are the backbone of everything in ITS. Technical specifications and standards are one of the policy instruments preferred by the stakeholders.
- Legal framework, not only the directive is crucial and should be upon its expiration, but also in terms of legal framework for data protection and security.
- Awareness raising among policy makers should remain high in priority, especially as ITS deployment through public investment depends mainly on the national and regional levels.

To ensure continuity and tangible results for fostering ITS deployment in the medium term, it is important to carefully assess whether additional activities are needed to either fulfil the operational objectives of a fairly advanced action or to ensure that achievements so far are followed-up, possibly moving down in the value chain as progress is made. In this regard, unless there is a need for more preparatory activities (e.g. through baseline studies etc.), the definition of clear work plans and milestones for each action deemed a priority is needed.

At this stage of the ITS Action Plan, very strong focus should be given to impact assessments, including cost-benefit studies that support them, in order to unequivocally demonstrate the benefits of ITS to higher level objectives and to support the clarifications of business cases for stakeholders.

In the medium/long term, once the present Action Plan is close to finalisation, a deployment strategy for ITS in the EU should be proposed. To the extent possible, an integrated approach covering all ITS-related activities in the European Commission should be taken. Support for coordination, decision making and a consistent funding strategy should be among the main pillars of such a deployment strategy.

In order to ensure consistency with Europe 2020, any re-orientation of the ITS Policy (in the medium/long term, once the current Action Plan is finalised) should *inter alia* include more targeted actions focusing on cleaner transport.

The use of a complementary set of instruments is certainly the best way to approach the implementation of the Action Plan in the future. As said, technical specifications and standards are assessed as being highly appropriate, and the European Commission is encouraged to continue the

work in cooperation with standardisation bodies. In this respect, it is highly important to ensure that standardisation mandates provide a sufficiently flexible framework to ensure they are appropriate to the needs of the industry and the latest technological development. In addition, the use and “fitness” of the standards and specifications should be closely monitored.

Other instruments include financial support to deployment and development. This calls for an even better integrated approach with RTD (upstream), as well as TEN-T and Regional Funds (downstream). Interestingly, however, stakeholders are careful when calling for large-scale deployment investment, probably understanding that the situation in public finances does not call for too ambitious investment programmes.

Although support to the Action Plan remains high, the consultation with stakeholders revealed an increasing need to demonstrate the benefits of coordinated deployment, both in terms of the added-value of EU regulation compared to market-driven deployment, and the contribution of ITS deployment to cleaner, safer and more efficient transport. eCall was acknowledged as a success story, but other initiatives providing direct support to deployment of ITS applications (e.g. secured truck parking, electronic road toll systems etc.) received mitigated support from stakeholders. The regulatory activities of the European Commission receive wide support from the stakeholder communities, but discordant views can be heard from private economic operators who already sell ITS applications, provide data or services, or bear the costs of complying with new standards or specifications. The industry was also concerned about the potential negative impact of unfitted regulation. Hence, more than ever, carefully selected priorities and approaches, and clear business cases, are needed in order to demonstrate the deployment incentives for all stakeholders.

By commissioning baseline studies to initiate the work in most of the actions and conducting impact assessments before issuing new specifications or regulation, the European Commission certainly ensures that initiatives are taken on the basis of well-identified needs and potential impacts. However, the evaluation also showed that there is a lack of monitoring data on the use and fitness of standards and specifications and on their impact on ITS deployment.¹⁵⁰ Although this may be seen as a low priority, the need for evidence may be crucial for the continuity of the Action Plan in the coming years.

Evidence of impact is also needed to further enhance the awareness of the policy makers at national and regional levels, since deployment should also occur through public investments in ITS solutions. In particular, increasing interest in urban mobility should be accompanied by continuous support of awareness raising actions.

8.2 Recommendations

Based on previous analysis, this section presents recommendations on 1) possible follow-up on respective actions, and 2) a possible review of the priority areas and priority actions of the Action Plan.

In line with the terms of reference for this evaluation, specific recommendations were constructed on the level of each individual action, an exercise which resulted in an extensive list of recommendations. The evaluator acknowledged the difficulties imposed on the European Commission from this approach, especially in light of the limited resources available for taking up the recommendations. Based on the results of this evaluation, upon internal review, the European

¹⁵⁰ However, it is foreseen as part of the Commission Reporting on the implementation of the Directive (Art 17 of the ITS Directive) that a review of the implementation and use of the specifications will be done

Commission was given a relevant list of options to pick and use when considering an improvement of the implementation of the current action plan and an increase in the effectiveness of the EU policy on ITS.

Better selected priorities are needed in order to avoid dispersion of resources. Therefore, in addition to the necessity of addressing current needs, better defined priorities are also required to ensure results in the medium and long term. In light of the limited resources available to the Commission two non-exclusive approaches are recommended:

- **Strategic:** The Commission is recommended to narrow its focus of action on the longer term and give high priority to actions deemed to be key in fostering ITS deployment.
- **Pragmatic:** As all actions implemented so far have been found to be, at least to some extent relevant¹⁵¹ in fostering deployment of ITS, the work conducted so far should be capitalised on, as such high priority could be given to well advanced actions already demonstrating results in order to pick up the low hanging fruits and show results on the short and medium term.

In the current stage of the Action Plan and under constraints imposed by the availability of human resource, the actions closer to finalisation should generally take priority.

More generally speaking, the following horizontal recommendations can be formulated:

- In the short term, work on the Action Plan should continue within the lines of the current objectives. It is not necessary to revise it based on its current progress, as the present evaluation does not recommend a considerable re-orientation of the current objectives.
- The internal management of the ITS Action Plan, in its current form, requires a definition of a clear work plan for a number of actions. This is especially important for the delayed actions, those with unclear final outputs or those with an "open ended" interpretation of operational objectives. The revised work plans should be built around realistic targets in terms of timing, taking into account limitations relating to the availability of human resources.
- The abovementioned work plans should be published on the European Commission's website in order to provide clarity for stakeholders with respect to the planned output of these actions.
- The present Action Plan heavily relies on stakeholder engagement and participation, which sometimes proved to be a challenge due to the great diversity of stakeholders. To support the implementation and effectiveness of a number of actions, the creation and moderation by the European Commission of a stakeholder platform(s) is recommended. While a stakeholder platform is certainly useful for a number of actions (see below), the diversity of the stakeholders and topics and themes that need to be on the agenda makes it difficult to employ a one-size-fits-all solution. The proposed platform(s) should have a narrow, yet flexible scope that adapts to the theme/topic and current issues. A possible approach is make use of a single platform, creating the individual working groups which will have a narrow and limited mandate following specific policy developments and supporting a particular milestone. The proposed platform(s) could build on the existing iMobility forum. The work conducted under such a platform could also benefit from the existence and work of the ITS Advisory Group. A stakeholder platform is particularly relevant for Action Areas 1 and 4.

¹⁵¹ See section on Relevance for more details.

- At this stage of the ITS Action Plan, very strong focus should be given to impact assessment, including cost-benefit studies that support them, in order to unequivocally demonstrate the benefits of ITS to higher level objectives and to support the clarifications of business cases for stakeholders.
- Interest in urban ITS and inter-modality is growing. These issues are being addressed at national levels, but more consideration for the EU level is needed in order to ensure interoperability and continuity of services.
- It is highly important to ensure that standardisation mandates provide a sufficiently flexible framework to ensure they are appropriate to the needs of the industry and the latest technological development. In addition, the use and “fitness” of the standards and specifications should be closely monitored.
- In the medium/long term, once the present Action Plan is close to finalisation, a deployment strategy for ITS in the EU should be proposed. To the extent possible, an integrated approach covering all ITS-related activities in the European Commission should be taken. Support for coordination, decision making and a consistent funding strategy should be among the main pillars of such a deployment strategy.
- For the future, and in order to further strengthen the strategic coherence with Europe 2020¹⁵² targets,¹⁵³ the consultants also consider that any potential re-orientation of ITS Policy (in the medium/long term once the current ITS Action Plan is finalised) should *inter alia* have a strong focus on cleaner and sustainable transport.

¹⁵² http://ec.europa.eu/europe2020/index_en.htm

¹⁵³ More specifically, the objectives set within the area of climate/energy

8.2.1 Action Area 1- Optimal use of road, traffic and travel data

Overall, Action Area 1 remains relevant and very high in priority. Access to data has not yet been unlocked, and it is a horizontal prerequisite to ITS deployment.

The ITS Directive provides the right instrument for issuing specifications, and recommendations tend to rely heavily on it.

As noted above, one important challenge identified in the scope of Action Area 1 concerns the quality of data. Only good quality data is useful and capable of making a difference. Hence, there is a need to define/find the optimal quality level of the data, as well as the appropriate monitoring and measurement methods.

Table 10, Recommendations for complementary, upgraded or new activities and actions

Action	Recommendations	Priority	Justification
1.1 Real time traffic & travel information	R.1.1.a Finalise the action as currently planned with a high degree of priority.	High	The 2 nd study (currently in preparation) which is aimed at supporting the definition of specifications under priority actions (a) and (b) of the ITS Directive should be conducted with a high priority, because any delay in the study will cause delays in the process of developing specifications.
	R.1.1.b The on-going work on elaborating specifications under the ITS Directive should take into account the recommendations of the completed study and, in particular, allow for a vibrant commercial traffic information industry.	High	The completed study has confirmed that the availability of data is a pre-requisite for ITS deployment, and the need to define common rules for data exchange between the private sector and public authorities is still relevant. As non-interference in an existing market is the major reason to be restrictive in the demarcation of 'safety-related' information. Consideration to commercial traffic information providers should be given and a balance between competing requirements on the definition of 'safety related' should be found when drafting specifications.
	R.1.1.c The Commission should take action to facilitate and coordinate a continuous dialogue between stakeholders, possibly through the establishment of a stakeholder platform.	Medium	While the specifications will clarify certain aspects of the provision of information and guarantee access to certain data, dialogue between stakeholders, especially between private and public, should be facilitated to promote enhanced collaboration and high quality data subject to exchange and better understanding of needs.
1.2 Collection & provision of road data	R.1.2.a Set up a work plan which defines and prioritises finalisation activities for Action 1.2.	High	The first activity of this Action is a baseline study, which at the time of reporting was being completed. The study will be a good basis for establishing a more precise work programme for finalisation of the work under the ITS Directive (Priority action (b)).

Action	Recommendations	Priority	Justification
	R.1.2.b Streamline and partially integrate Action 1.2 in the scope of the other actions within Action Area 1.	High	Minimum rules and procedures for the collection and provision of road data partially support the attainment of other actions within Action Area 1 (e.g. 1.1, 1.3, 1.4 the overall vision behind 1.5). The evaluator recommends exploring the possibility of treating the collection and provision of road data relevant for the actions as a vertical rather than horizontal approach. This would answer the particular needs of each action and, as such, their completion would reflect the priority levels of the supported action. Integrating the relevant parts of this action into other actions will allow a better prioritisation of particular issues within this action.
1.3 Data for digital maps	R.1.3.a All follow-up activities to be undertaken under this action, including the drafting of specifications under the ITS Directive, should be given a high priority or, if possible, moved forward.	High	There is a momentum in the area, and a great potential for new applications and deployment. As this area is very dynamic and quickly developing and evolving, the timing and implementation of the policy framework should reflect the same trend.
	R.1.3.b Follow up on the recommendations formulated in the study, set priorities and assign responsibilities. The recommendations should be integrated in a work plan for concrete implementation.	High	A large number of follow-up actions have been recommended by the study, but there is, for the moment, insufficient clarity as to who will be responsible for carrying out these activities. The work plan should explore possibilities in cooperation with the Digital Maps Working Group (incl. support actions for eMaps and the ROSATTE Implementation Platform).
1.4 Free minimum information	R.1.4.a Encourage and support Member States to prepare and publish implementation roadmaps.	Medium	The specifications are ready and should be adopted by the Commission in Q1 2013. Member States need time to settle all the organisational and policy issues, which will arise as a result of the process of private and public service providers making business out of this type of data, opening up all data sources, etc. In order to support Member States and other stakeholders in complying with the specifications, the action can be extended to cover implementation and to support measures which focus on user needs, encourage compliance, help business cases and complementary measures to ensure data quality and data fusion (monitoring and fitness checks ¹⁵⁴).

¹⁵⁴ On 'fitness checks', see Secretariat General of the European Commission: http://ec.europa.eu/dgs/secretariat_general/evaluation/docs/fitness_checks_2012_en.pdf

Action	Recommendations	Priority	Justification
	R.1.4.b Similar to Action 1.1, the Commission should take action to facilitate and coordinate a continuous dialogue between stakeholders, possibly through the establishment of a stakeholder platform.	Medium	While the action and specifications will clarify certain aspects of the provision of information and guaranteed access to certain data, dialogue between stakeholders, especially between private and public, should be facilitated to promote enhanced collaboration, high degree of quality of the data subject to exchange and better understanding of needs.
1.5 Promotion of multimodal journey planners	R.1.5.a Starting from the findings of the study already conducted, consider conducting a short assessment of the pre-requisites that must be met in order for fully-fledged MMJP to be developed and able to deliver their services to citizens.	High	In order to better serve the vision of having multi-modal journey planners enable seamless and informed travel on a "European" or "cross-border" end-to-end multi-modal dimension, switching from air, rail or sea to urban or road transport, the existence and availability of accurate data needs to be ensured. For this purpose a more in-depth analysis of the pre-requisites to MMJP is required.
	R.1.5.b Take forward the vision for multi-modal journey planners and integrate it in the implementation of other actions within Action Area 1. More specifically, the development and enforcement of specifications under the ITS Directive should support the vision of multimodal journey planners, ensuring that all pre-requisites for developing fully fledged MMJP are met.	High	Further work for the promotion of multimodal journey planners is conditional to the progress made in terms of the availability of interoperable digital maps and travel data (other actions). Recent developments (TAP TSI, national or regional multimodal door-to-door journey planners) are opportunities but also threats (need to ensure interoperability of new systems). In order to create an environment suitable for stakeholders to create the required services, the follow up activities regarding data, access, data formats, and rules of use of the data need to be given high priority.
	R.1.5.c Incrementally expand the scope of the policy on MMJP to systems that incorporate information, schedules, real time traffic information as well as ticketing in order to move towards the final stage in the process leading towards seamless travel.	n/a	Fully-fledged multimodal journey planners require a strong business case in order to become a reality; currently, passengers take travel data for granted and are not willing to pay for it. The limitation in scope of the policy to cover journey planning as a specific topic, distinct from buying a ticket, is a pragmatic approach that takes into account the reality of what is achievable in the short term. The consumer perspective as well as the current stage of policy development calls for the integration of ticketing as an integral part of the process leading towards seamless travel.
All (Action Area 1)	R.1.a Defining the optimal quality level of data, as well as monitoring and measurement methods, should be given high priority of the specifications being drafted in the ITS Directive.	High	The availability and quality of data are a pre-requisite for ITS deployment.

Action	Recommendations	Priority	Justification
	R.1.b The specifications drafted under the ITS Directive should draw clear lines between public and private data on the one hand, and between data, information and services provided based on the filtering of data and the use of information on the other hand.	n/a	The distinction may strengthen the consistency of the work and would potentially ensure that sufficient consideration is paid to the interest of commercial traffic information providers as well as provide additional clarity for authorities and operators.

8.2.2 Action Area 2 - Continuity of traffic and freight management

Overall, Action Area 2 remains relevant, and the need was confirmed for seamless and dynamic traffic and transport management solutions.

However, the Action Area includes a variety of initiatives, and the way forward must be assessed on a case-by-case basis. In addition, all actions are marked by contextual developments that must be taken into account for the future.

Table 11 Recommendations for complementary, upgraded or new activities and actions

Action	Recommendations	Priority	Justification
2.1 Continuity of ITS services	R.2.1.a Conduct an appraisal of the relevant 2012 EasyWay deployment guidelines to verify whether the guidelines are able to sufficiently and satisfactorily fulfil the objectives set forth by this action.	Medium	The adoption of the revised Easyway guidelines in November 2012 was a major development affecting Action 2.1. Although a number of these guidelines are relevant in terms of the objectives of Action 2.1, it is unclear whether they are appropriate and/or sufficient to achieve all the objectives and facets of the action.
	R.2.1.b Redefine the scope and strategy of the action based on the appraisal conducted above and in accordance with other developments.	Medium	The recent developments mentioned include <i>inter alia</i> : the adoption of the 2012 EasyWay deployment guidelines, progress made in other actions of the Action Plan (e.g. specifications), and growing interest in urban mobility (see 6.4).
	The redefinition of scope should include an updated work plan, together with revised deadlines for completion.		It is likely that the recent developments that have taken place in the context of other actions (e.g. specifications and standards) will result in a considerable downscaling of the scope of this action, which will mostly contain horizontal and/or residual issues not already taken up by other actions.
	R.2.1.c Ensure that urban issues are duly taken into account and included in the scope of the re-defined 2.1.	Medium	As interoperability continues to be an issue in cities and there is growing interest and great potential in urban mobility (see 6.4), the urban dimension of Action 2.1 was considered as relevant.
R.2.1.d Consider standards or specifications for specific issues (possibly in relation with other actions) as instruments for supporting the continuity of ITS services.	Medium/ Low	The current situation in which a large number of players operate, develop and implement different ITS solutions will lead to a situation in which interoperability will be at risk and the continuity of services will not be sustained for very specific areas. Where such a need exists, consideration should be given to the possibility of issuing more specific standards and specifications in relation to an individual technology/application. This recommendation can also be implemented within the scope of other actions.	

Action	Recommendations	Priority	Justification
	R.2.1.e Similar to Actions 1.1 and 1.4, the Commission should take action to facilitate and coordinate a continuous dialogue between stakeholders, possibly through the establishment of a stakeholder platform.	Medium/ Low	<p>One of the objectives of a revised approach to this action should be to better integrate the EU level dimension and interests with national and local authorities with private sector involvement. This objective can be achieved through the establishment of a forum that allows members to exchange views, present ideas and best practices and raise awareness of planned policy and inter-connected needs.</p> <p>While stakeholder participation and cooperation is relevant for this action, in light of the extensive stakeholder consultation conducted by Easyway and the need for the Commission to focus existing resources, the recommendation receives a relatively lower level of priority.</p>
2.2 eFreight	n/a	n/a	A new cross-modal initiative is being prepared by the Commission for 2013.
2.3 ITS architecture	R.2.3.a Assess the E-Frame framework Architecture against EU objectives and requirements and decide on whether and how to resume the work.	Medium/	<p>The Commission's approach for implementing this action built on a study that would assess the possibility of using the FRAME architecture for the purposes of achieving the objectives of the action. As the E-FRAME project was finalised in November 2011, the Commission can proceed with carrying out the study it had initially planned but subsequently suspended in order to wait for the finalisation of the E-FRAME project.</p> <p>A lightweight quick review of the FRAME indicates that it provides answers to the policy objective as formulated in the Action Plan. According to the stakeholders interviewed, the existing FRAME architecture incorporates to a certain extent all the aspects mentioned in Action 2.3: travel planning, transport demand, traffic management, emergency management, road pricing.</p> <p>If the action is resumed, the assessment of the eFRAME is a necessary first step.</p>
	R.2.3.b As a result of the assessment, make a decision on whether to resume the work under this action. An updated work plan should clarify and formulate the concrete measures (e.g. endorsement, promotion, further development, etc.). Resuming the work under this action should have a medium/low priority.	Medium/ low	<p>With respect to the multimodal aspect of the operational objective, the stakeholders interviewed acknowledged that the initial focus of the FRAME architecture was mainly road transport, as ITS developed from the road perspective the ITS architecture does not go into how other modes need to produce the data.</p> <p>The next step in re-starting this action should be based on the analysis of E-FRAME's contribution as presented above and should include an assessment of what else is required in order to update the multimodal European ITS Framework architecture for intelligent transport systems and a definition of an ITS framework architecture for urban transport mobility.</p>
	R.2.3.c Emphasise urban architecture framework as part of the scope of a revised action.	Medium/ low	There is a growing interest and great potential in urban mobility (see 6.4), while cities continue to disregard interoperability issues.

Action	Recommendations	Priority	Justification
2.4 Electronic road tolling	R.2.4.a Increase awareness of the benefits of EETS deployment, and develop the business case by supporting field trials, demonstrations, and pilot projects.	Medium/low	<p>The mid-term review of the European Commission decision 2009/750/EC on the definition of EETS and its technical elements as well as the results of this evaluation indicate that the necessary next step for further uptake of EETS is the development of adequate business cases by stakeholders.</p> <p>In order to facilitate this objective, the Commission may consider supporting field trials, demonstrations and field trials in collaboration with active stakeholders to serve the dual purpose of increasing awareness and helping stakeholders develop business cases.</p> <p>The Commission invested a lot to promote the implementation of the Directive on the interoperability of electronic road toll systems. A pause is needed, during which stakeholders should take a stronger role in further uptake.</p> <p>Further action, beyond what is already in the pipeline for this action, is evaluated to be of medium/low priority</p>
	R.2.4.b Promote regional rather than EU-wide deployment.	Medium/low	The relevance of EETS is higher for Member States with high levels of international traffic. As such the interest to invest and deploy EETS is higher for these Member States. A pragmatic (regional) approach to deployment that takes into account the realities of the market is seen to be more appropriate than the ideal, European wide solution.
	R.2.4.c Establish a stakeholder platform (an industry forum) for longer term cooperation.	Medium/low	Similar to Actions 1.1, 1.4, and 2.1, the Commission could take action to facilitate and coordinate a continuous dialogue between stakeholders. Such an approach is easily facilitated by the fact that potential EETS providers in the area have already formed a common association ¹⁵⁵ to represent their views. The Commission could easily fill the role of facilitator of dialogue between the wider stakeholder groups that include public authorities, manufacturers of tolling equipment, network operators, etc.
	R.2.4.d Support deployment through TEN-T projects.	Medium/low	<p>Field trials, demonstrations, and pilot projects as recommended above could be funded through TEN-T.</p> <p>Larger scale deployment could also potentially be supported by TEN-T, if the field trials, demonstrations, and pilot projects prove their feasibility and raise sufficient support from the stakeholders. Such a support would address the concerns of toll chargers and EETS Providers and alleviate some of the required considerable investments.</p>

¹⁵⁵ Association for Electronic Tolling and Interoperable Services (AETIS)

Action	Recommendations	Priority	Justification
	R.2.4.e Ensure that data protection issues are addressed by streamlining those as a specific topic to be treated as part of Action 5.2.	Medium/ low	A strong barrier to EETS deployment are the concerns raised with the treatment and use of the personal data collected and recorded with the purpose of road tolling. Market acceptance will only be ensured once clarity regarding the use and protection of this data is provided.
	R.2.4.f Follow-up activities, outside of the activities currently in the pipeline, can be done in the context of Action 4.2.	Medium/ low	As an alternative to following-up the action, once the activities in the pipeline are completed, EETS system could be included or merged into cooperative ITS deployment. As such, it would become one of the services under cooperative ITS.
All (Action Area 2)	<p>R.2.a Conduct an internal review of the appropriateness of the actions within this area with respect to the current needs and taking into account the findings of the present evaluation.</p> <p>The internal review should <i>inter alia</i> consider whether the suspended actions within this area should be restarted and/or the scope of all the actions redefined.</p>	High	<p>Actions 2.1, 2.2, 2.3 all require some sort of review or redefinition of scope in light of recent developments external of the Action Plan and/or progress made in connection with other actions.</p> <p>Action 2.4 is also close to completion and the marginal added value of further EU intervention in addition to the substantial work already conducted should be taken into account when scoping future follow-up measures.</p> <p>The priority of the actions within Action Area 2 has been presented as relatively low in this evaluation in response to the limitations faced by the Commission with respect to resources available and is not due to complete lack of relevance of the Action Area to foster deployment of ITS. For this reason, the recommendation to conduct an internal review of priorities within this should be taken-up by the Commission with a high priority. The objectives of the internal review should be to free up resources while ensuring that essential aspects (such as continuity aspects which regard 'co-modality' and Urban ITS) will continue to be taken into account (either within the scope of other actions or as part of re-defined actions).</p>

8.2.3 Action Area 3- Road safety and security

Action Area 3 remains highly relevant. No major changes were brought to the attention of the evaluator. Increased safety and security of roads remain a widely shared policy objective. ITS-based road safety and security applications offer great potential, while it is equally important to ensure the safety of all road users in an increasingly complex environment.

Table 12 Recommendations for complementary, upgraded or new activities and actions

Action	Recommendations	Priority	Justification
3.1 Promotion of safety related ITS	R.3.1.a In the medium term (3 years from their entry into application), plan and carry out an evaluation of the implementation of Commission Regulations(EU) No 351/2012 and No 347/2012 in order to assess the deployment and impact of AEBS and LDWS.	Medium	Support of coordinated deployment may be needed. Clearly identified impacts will make it possible to inform consumers about the benefits achieved to date, and as such, support new initiatives in the area of ADAS.
	R.3.1.b Proceed with planning and implementing the envisioned activities in support of the development of ADAS technologies, notably by providing financial support to research and innovation activities and supporting awareness-raising activities.	High	The process behind drafting the Commission Staff Working Document on in-vehicle safety devices, which is planned for 2013 and expected to include an assessment of the benefits of those systems as well as an evaluation of the possible needed legislation, is a great opportunity to develop a detailed work plan for the implementation of future measures in support of ADAS technologies. In light of the success that has been achieved in the implementation of the first part of this action related to AEBS and LDWS and the potential safety related benefits that promoting ADAS is expected to have, the future measures should receive a high priority.
	R.3.1.c Monitor the technical/ operational maturity, deployment and expected benefits of ADAS and other safety-related in-vehicle technologies and devices in order to pursue avenues for the promotion of the most effective ones.	Medium/ High	As planned in the Action Plan, this approach, which is already in the current pipeline, is the relevant and necessary next step for further initiatives in this action.

Action	Recommendations	Priority	Justification
	R.3.1.d Take into account when scoping the future measures in Action 3.1 the conclusions of the study on the Safety and Comfort of Vulnerable Road Users (VRU) relating to ADAS.	Medium/ High	The study conducted under Action Area 3.4 (study on the Safety and Comfort of Vulnerable Road Users ¹⁵⁶) issued non-binding, financial and legislative measures in the area of Advanced Driver Assistance Systems (ADAS) with the view of enhancing the safety of VRU.
3.2 eCall	R.3.2.a Continue the efforts to speed up eCall full deployment by 2015 (e.g. support for EeIP, awareness raising and educational activities, target actions towards automotive operators, telecom operators and Member States as planned) with a high priority.	High	The technical development of eCall is completed. The work required to upgrade the Public Safety Answering Points' infrastructures, within the framework of the HeEROs project, is well under way. Plans to arrange more awareness and education campaigns are also in place. Continued support from the Commission for deployment is therefore ensured and should be implemented with high priority.
3.3 Human-machine interface	R.3.3.a Assign a project officer (action leader) to the action and re-launch it along the lines of the already established strategy, starting with an assessment of the need to go beyond the existing frameworks (on the need for revision and update of the European Statement of Principles, building on the conclusions of the eSafety WG on HMI).	High	The extremely dynamic evolution of technology and its uses in the vehicle raised the relevance of this action since the adoption of the Action Plan. Smart phones, iPods and tablets have developed considerably. The increased use has changed the way people interact with technology and this is a factor that has increased the relevance of the action. Moreover, the importance and use of on-board and nomadic devices has also increased; there have been technological advances on what these devices achieve, as well as on their "intelligence" – (i.e. adaptability to driving conditions, driver's situation, etc.).
	R.3.3.b Update the terms of reference for the previously planned study to take into account recent developments ¹⁵⁷ , conduct the planned study to assess the need for a revision and update of the European Statement of Principles and analyse the potential impacts of an updated statement of principles.	High	As initially envisioned by the action, a regulatory framework may not be the most appropriate solution for the action. The question should be included in the scope of the study and such a need examined in more detail.

¹⁵⁶ ITS AP 3-4_Final Report page 8/91

¹⁵⁷ E.g. the work conducted by The eSafety (iMobility) Forum Working Group on HMI which finalised a detailed document on HMI that can be found at http://www.esafetysupport.org/download/working_groups/HMI_WG/esafety_wghmi_draft_report_13_10_09_final.pdf

Action	Recommendations	Priority	Justification
	R.3.3.c Once the terms of reference of the study are updated and the newly assigned action leader has a full understanding of what remains to be achieved in the course of this action, draft and publish an updated work plan for this action. The revised work plan should be published on the dedicated web-page.	High	There is insufficient clarity for Member States as what to expect from the action (recommendation, mandatory framework), which in return results in lack of support. The re-launch of the action should be accompanied by a detailed work plan that lays down the planned activities as well as a clear description of the approach and planned output of the action.
	R.3.3.d Explore possibilities to collaborate with the US and reach an international (trans-Atlantic) solution rather than a regional (EU) solution.	Medium	In recent developments, the US has taken the lead on the matter and have issued a document ¹⁵⁸ that builds on the ESoP and goes deeper into how to implement some of the measures. Although there are differences in the two approaches, a large number of similarities exist and synergy from adopting a common approach can be achieved. In light of the difficulties and added costs of such an approach, it should be given medium priority, but the possibility should be considered.
	R.3.3.e Take into account the conclusions of the study on the Safety and Comfort of Vulnerable Road Users that relate to HMI when scoping the future measures in Action 3.3.	Medium/ High	The study conducted under Action Area 3.4 (study on the Safety and Comfort of Vulnerable Road Users ¹⁵⁹) issued non-binding, financial and legislative measures in the area HMI with the view of enhancing the safety of VRU. These could be streamlined into this action to ensure consistency and avoid duplication of efforts.

¹⁵⁸ Alliance of Automobile Manufacturers (June 26, 2006). Statement of Principles, Criteria and Verification Procedures on Driver Interactions with Advanced In-Vehicle Information and Communication Systems, Washington, D.C.: Alliance of Automobile Manufacturers.

¹⁵⁹ ITS AP 3-4_Final Report page 8/91

Action	Recommendations	Priority	Justification
3.4 Vulnerable road users	<p>R.3.4.a A detailed work plan for finalisation of this action needs to be drafted based on an internal review of the work conducted so far. The basis for drafting the future work plan within the scope of this action should be an internal review of the developments within this area and the work conducted so far.</p> <p>The internal review of the appropriate measures should also include an assessment of the recommendations of the study.</p> <p>Such a work plan should contain <i>inter alia</i> the scope and content of the “appropriate measures” for the Commission service in charge of their completion together with a revised timetable for finalisation.</p>	High	<p>In the wording of the Action Plan, the scope and objective of this action were presented in a vague manner and there was a large degree of largesse with respect to what was to be understood as “appropriate measures” and whether the action proposes to just develop or also to undertake said “appropriate measures”. What is required for its completion is thus unclear.</p> <p>The study conducted formulated a wide range of specific recommendations, on the policy level along with the disposal instruments available to the Commission, but it is not clear to whom those recommendations have been addressed and there is no plan for their implementation.</p> <p>The main questions that should be answered by the internal review of recommendations are: Which of them are already taken up or on-going, considering that Unit C4 on road safety of DG MOVE is also working on actions that might touch the recommendations of the study. Which ones should or shouldn’t be put on the agenda, i.e. to assess the relevance and feasibility of taking up recommendations.</p>
	<p>R.3.4.b Take up some of the recommendations of the study by streamlining some elements into the work plans of other actions in order to ensure higher synergy and avoid duplication of efforts.</p>	Medium/ High	<p>Such a decision should be made based on the Commission’s assessment, and the Commission may be free to choose whether all aspects of Action 3.4 should be implemented as a single package and therefore managed by a single project officer, or whether integrating specific parts in the scope of other actions will not jeopardise the achievement of the action’s objectives.</p> <p>The recommended measures relating to ADAS could be taken into account when further developing (ADAS) as part of implementing Action 3.1.</p> <p>Specific measures deemed appropriate in the area of cooperative applications and infrastructure based applications could be streamlined in the work of Action 4.2</p> <p>Measures which regard HMI could be taken-up as part of the revised work-plan of Action 3.3</p>

Action	Recommendations	Priority	Justification
	<p>R.3.4.c Continue with a high priority the implementation of the FP7 research project as planned.</p> <p>Ensure that sufficient resources are allocated for project management from the Commission's side.</p>	High	<p>The FP7 call on the "Impacts of Intelligent Transport Systems on vulnerable road users" is about to start producing projects that serve the purpose of the Action Plan.</p> <p>The relatively high costs of these projects and important potential benefits that can be derived justify a high degree of involvement and oversight from the Commission in order to ensure the correct implementation and the attainment of the policy goals as mentioned in the Action Plan.</p>
3.5 Secured truck parking	R.3.5.a Finalise the impact assessment with a strong emphasis on the cost-benefit analysis of all policy options as compared to the baseline scenario.	High	Currently stakeholders support the necessity to implement information services in order to 1-optimize parking places, 2-reduce dangerous parking and 3-provide drivers and Transport companies the relevant information for them to make the best decision where to park. According to the impact assessment study the implementation of the specifications will induce costs but they are significantly covered by saving due to less accidents and less searching time...
	R.3.5.b Set up a monitoring system to measure the impacts of a reservation service system (on parking occupancy, truck driver stress and road safety) to accompany the specifications in the area that are planned to be adopted by February 2013.	Medium	<p>Member States and road operators and users are coming to an agreement on shared rules when deploying information service.</p> <p>A monitoring system would provide for the coming years complementary evidence on the use and benefits become available, wide scale deployment will be easier.</p>
	R.3.5.c Collect best practices on information and reservation systems for parking in order to assist with forecasting truck parking demand, capacity and deficit problems on the TEN-T, including the demand and availability of normal and secure parking.	Medium	<p>The cost efficiency of ITS solutions for secure parking places and develop has been evaluated in the IA study and will be completed by information on Member States initiative that just have started.</p> <p>A collection of best practices on information and reservation systems for parking has also been performed in this respect</p>
	R.3.5.d In the long term, consider partially integrating the outcomes of Action 3.5 in the co-modal strategy for freight (Action 2.2)	Medium	Generally speaking, ITS provides information platforms that enable traffic management, public transport, road transport and freight. Action 3.5 could in the long term provide some inputs for more co-modal management for freight. If it is known where the trucks park, it is possible to make better informed management decisions of the routes of the freights, by rail or by sea.
All (Action Area 3)	R.3.a Ensure adequate monitoring and evaluation of the impacts of road safety and security ITS applications.	n/a	The benefits must be clearly demonstrated before enforcing wide deployment.

8.2.4 Action Area 4- Integration of the vehicle into the transport infrastructure

Overall, Action Area 4 remains relevant and high in priority. Interoperability remains, together with the collection and provision of data, a horizontal issue, and there is still a long way to go to guarantee interoperability and interconnection of the vehicle platform with infrastructure systems and facilities.

Table 13 Recommendations for complementary, upgraded or new activities and actions

Action	Recommendations	Priority	Justification
4.1 Open in-vehicle platform	R.4.1.a Continue to define the market and business model, and assess stakeholder willingness to invest.	Medium	In accordance to current plans, a study is on-going. It must be examined whether the definition of an open in-vehicle platform will support market deployment. As it is now, market potential is missing and willingness to invest low. The ITS community is not committed to the objective of the action. Therefore, the on-going study is the appropriate first step.
	R.4.1.b By mid-2013, a clear goal and strategy should be identified and developed (e.g. mandatory universal platform, interoperability of services between heterogeneous platforms etc.).	Medium	The adoption of an open in-vehicle platform architecture is an ambitious objective that faces numerous challenges, ranging from the economic crisis to uncertainty regarding whether the demand for a unique in-vehicle platform would continue in the long term and hence justify the investment. The revised work plan should take into account the results of the on-going study with respect to market readiness when defining the implementation strategy.
	R.4.1.c Ensure synergy of this action with other actions that deal with vehicle infrastructure (i.e. 2.4, 3.2, 4.2, etc.).	Medium	As the Action Plan supports the development of eCall, cooperative systems, road tolling systems and an open in-vehicle end result should avoid a situation in which too many different boxes will have to be included in vehicles. As such, need for an in-vehicle platform should also take into account the technical needs of the other specified actions.
4.2 Cooperative vehicle systems	R.4.2.a Support and increase the ambition of additional field operational tests of large-scale cooperative systems.	Medium/ Low	To ensure deployment, there is a need to demonstrate further the benefits of cooperative systems. Technology development should cover all kinds of transport solutions and the whole transport system, i.e. all kinds of transport modes, ticketing systems, and infrastructure, in a wider perspective.
	R.4.2.b Define a deployment and investment strategy/roadmap for intelligent infrastructure (including: regulatory initiatives, certification of cooperative systems, infrastructure investments etc.).	High	Great efforts are being deployed to define standards and specifications; concrete deployment is the logical next step. The deployment strategy for investment in infrastructure should be envisioned in the medium/long term as part of a revised EU strategy on ITS Deployment, and should be proposed when the current ITS AP will be finalised or close to finalisation.

Action	Recommendations	Priority	Justification
	R.4.2.c Support the creation of a stakeholder platform under the moderation of the Commission.	High	<p>The stakeholder platform would bring together all parties working with cooperative systems, (e.g. car manufacturers, suppliers of the systems, road and public authorities, network operators, etc.).</p> <p>The platform would assist in reaching final agreement with stakeholders on a harmonised approach, drafting the roadmap for investments in intelligent infrastructure, supporting the implementation of the final deployment strategy and finding clear milestones for the following work.</p>
	R.4.2.d Take into account the conclusions of the study on the Safety and Comfort of Vulnerable Road Users that relate to Cooperative systems when scoping the future measures in Action 4.2.	Medium/low	The study conducted under Action Area 3.4 (study on the Safety and Comfort of Vulnerable Road Users ¹⁶⁰) issued non-binding, financial and legislative measures in the area of HMI with the view of enhancing the safety of VRU. These could be streamlined into this action to ensure consistency and avoid duplication of efforts.
	R.4.2.e Ensure that this action also integrates the specific privacy and liability issues related to it.	Medium/low	<p>Privacy and liability are of particularly high importance in the area of cooperative systems.</p> <p>Privacy and liability should specifically look into the area of cooperative systems; e.g. a liability map (guidelines for interpretation of specific aspects related to liability) would be especially useful for stakeholders.</p>
4.3 I2I, V2I, V2V communication	R.4.3.a Promote, support and monitor the use of specifications (when ready).	Medium	There is potential for concrete deployment and results once the action is completed. However, the amount of intervention from the Commission is not high, as this action relies heavily on stakeholder engagement and leadership.
	R.4.3.b Support the creation of a stakeholder platform possibly in the framework of a new cooperation platform, as recommended for Action 4.2)	High	The one source of inefficiency identified was a lack of cooperation between stakeholder groups, both European and international. An implementation platform would be helpful to identify what is still needed, agree on the steps to achieve it, and produce high quality specifications.
4.4 standardisation mandate	R.4.4.a Support the creation of a stakeholder platform under the moderation of the Commission.	High	A stakeholder platform would assist the Commission in defining new mandates that are more precise and better describe the needed standards. It would also provide internal and external coordination to the best extent possible.
	R.4.4.b Set up a monitoring system to assess whether the standards are being used.	Medium	

¹⁶⁰ ITS AP 3-4_Final Report page 8/91

Action	Recommendations	Priority	Justification
	R.4.4.c Define new mandate(s) (possibly with more flexibility to make it possible to address emerging needs and changes in technology over time).	Medium	It is unclear whether there is a demand/need for more standards. However such needs will become evident once work on other actions (i.e. Actions 4.1 and 4.2) progresses. In addition, possible future mandate(s) should give the standardisation body the possibility to monitor the use of existing standards (see recommendations above) and propose the production of new/updated standards in areas that require it.
All (Action Area 4)	R.4.a Establish a cooperative system implementation platform bringing stakeholders together (at both EU and internal levels).	High	This is a requirement for implementing the development strategy and identifying needs for further specifications, standards and a harmonised approach for the deployment of cooperative systems.
	R.4.b Progressively expand the scope of the work in order to focus on the whole transport system and logistic area, i.e. all kinds of transport modes, ticketing systems, and infrastructure in a wider perspective.	n/a	

8.2.5 Action Area 5 - Data security and protection, and liability issues

Action Area 5 remains highly relevant and high in priority, as there is still a high level of uncertainty regarding the legal framework for ITS deployment.

The studies conducted in the Action Area brought a number of recommendations to the table, and the interviewed stakeholders also made a few suggestions. However, there were no strong views among stakeholders as to what should come next. The Commission, possibly with the support of key stakeholders, may need to review all recommendations and set priorities for the future.

Table 14 Recommendations for complementary, upgraded or new activities and actions

Action	Recommendations	Priority	Justification
5.1 Security, data protection	R.5.1.a Assess the recommendations of the study and follow-up new initiatives with a high priority. Give priority to non-regulatory initiatives, e.g. by providing support to the implementation of existing legislation.	High	A number of recommendations will be formulated in the study report. Privacy concerns can lead to the rejection of ITS applications by the end-users. Additionally, data protection is a fundamental right of the EU (not an option), and for these reasons follow-up measures of this action are to be given a high priority.
	R.5.1.b Set up a work plan that includes the definition of appropriate measures (based on study results), a timetable for their implementation, the responsible Commission services and realistic targets for achievement of such measures.		The following are potential examples for follow up of the study: <ul style="list-style-type: none"> • The development of a tool and guidelines to support privacy and data protection impact assessments • The adoption of ITS specific legislation covering data protection aspects • Guidance on how to apply data protection legislation in ITS application development and operation • An assessment of the possibility of self-regulation actions, e.g. guidelines and codes of conduct
	R.5.1.c Re-enforce the dimension of the action on data security and the risks associated with it.	High	The intermediate report (analysed at the time of this evaluation) did not address security threats and remedies, although this is a major issue for technologies that heavily rely on information networks. There should be a link between security and architecture.
	R.5.1.d Address the issue of data use for law enforcement.	High	The use of data for law enforcement is a sensitive issue for users, and it must be discussed openly in order to build trust and confidence and foster the use of ITS applications by the end-users.

Action	Recommendations	Priority	Justification
	<p>R.5.1.e Consider streamlining specific issues into the implementation of other actions (based on the assessment referred to in the recommendation above and using the findings of the study as a starting point).</p> <p>Major issues should be brought to the table of the Working Party 29,¹⁶¹ which could take over the discussion and issue specific recommendations and guidelines, similar to what they have done regarding facial recognition and geolocation.</p>	High	<p>The implementation of the next step, i.e. the proposition of appropriate measures, promises to be challenging. It will be very difficult to provide one-size-fits-all solutions, because ITS applications collect and use personal data in a very varied way, so the impact on data protection is different for each application. In light of this, the scope of the action might prove to be too broad and too difficult to be achieved horizontally.</p> <p>As such, some data protection issues could be streamlined into the work of each action of the Action Plan rather than as a separate, horizontal issue.</p>
5.2 Liability issues	<p>R.5.2.a Assess (possibly through stakeholder consultations) the recommendations of the study and follow them up with new initiatives with a medium priority.</p> <p>Such initiatives could possibly combine regulatory (e.g. adaptation of the Vienna Convention) and non-regulatory initiatives (e.g. promote guidelines for the development and validation of safe ITS technologies and applications that reduce liability risks).</p>	Medium	<p>A number of recommendations were formulated in the study report. The general principle where each stakeholder is only responsible for the part of the service chain under his control can apply.</p> <p>Even though liability issues have been identified as very important for the deployment of ITS and stakeholders would welcome the Commission's intervention in the area, The legal complexity of liability regimes applicable across Member States would cause any intervention by the EU to address issues from a legal point of view to be very cumbersome, costly and would likely be met with resistance from Member States.</p> <p>The differences between the source of the legal provisions affecting liability issues (deeply rooted in national civil codes and legal practices) and the source of data protection provisions (EU legislation) is considerably large. The lack of past EU intervention in the area reduces the opportunity of making a considerable impact within a reasonable timeframe. As such, the priority for follow-up measures within this area should be set at medium</p>

¹⁶¹ The Working Party has been established by Article 29 of Directive 95/46/EC. It is the independent EU Advisory Body on Data Protection and Privacy. Its tasks are laid down in Article 30 of Directive 95/46/EC and in Article 15 of Directive 2002/58/EC.

Action	Recommendations	Priority	Justification
	R.5.2.b The establishment of a common information platform (e.g. a specific ITS liability webpage/forum) that provides general principles of how to handle liability issues and that displays the specific rights and duties of each stakeholder.	Medium	This recommendation was also formulated by the study report and it is seen as especially relevant in light of the findings of this evaluation.
	R.5.2.c Set up a work plan based on the recommendations of the study that should include <i>inter alia</i> a timetable for implementation, the responsible Commission services and realistic targets for achieving each item.	Medium	In addition to the recommendations contained in the study, this evaluation also recommends the use of the following: <ul style="list-style-type: none"> • Liability maps – representations of responsibilities for different families of applications that would assist in determining the liability limits of different actors in the context of ITS and, specifically, in cooperative systems. • Recommendations endorsed by the Commission on how to address liability issues (e.g. a liability code of practice).
All (Action Area 5)	R.5.a Following the finalisation of the on-going studies, both actions require the creation of a specific work plan based on a realistic assessment of the recommendations and options that have been brought forward.	High	It is the assessment of the Evaluator that there is no lack of options and possibilities for following-up this Action Area, and the Commission and stakeholders share, overall, a common idea of what needs to be done. However, there is uncertainty for all parties about what and when the actual steps and concrete measures need to be taken.

8.2.6 Action Area 6 - ITS Cooperation and coordination

While most of the actions and Action Areas of the ITS Action Plan focus on the industry and operators, Action Area 6 is oriented toward policy-makers, who are a fundamental element of the ITS value chain. For this reason, and in spite of its less tangible contributions to ITS deployment, Action Area 6 should remain high in priority, continue to collect best practices and promote ITS in public transports.

Meanwhile, in order to ensure that the community interest is taken into account in the deployment of ITS, especially at the local level to ensure interoperability and continuity of services at the border, more top-down (e.g. through specifications) may be needed.

Table 15 Recommendations for complementary, upgraded or new activities and actions

Action	Recommendations	Priority	Justification
6.1 Legal framework for co-ordination	<p>R.6.1.a The renewal of the mandate of the ITS Directive when it expires¹⁶² is considered a high priority.</p> <p>The revised legislative framework should take into account certain recommendations for improvement of the legal framework, as presented below.</p>	High	<p>The ITS Directive is a key instrument for the implementation of the ITS Action Plan and a cornerstone of the EU ITS policy.</p> <p>Because the mandate of the Directive is limited to 7 years, the Directive needs to be extended or replaced by a new act, depending on the specific situation.</p> <p>Future needs will require the development of specifications in new areas and actions.¹⁶³</p>

¹⁶² 27 August 2017, in accordance with Art 12 of Directive 2010/40/EU

¹⁶³ The scope and content of which should be the result of assessment of needs identified within the course of implementation of other actions currently ongoing under the Action Plan, particularly Action Area 4

Action	Recommendations	Priority	Justification
	R.6.1.c Ensure a sufficiently high level of stakeholder involvement and stakeholder consultation in the process of drafting specifications.	Medium	<p>According to Art 290 of the TFEU, the functional, technical, and organisational, service provision specifications are adopted as delegated acts.</p> <p>Because this process (i.e. the adoption of delegated acts) ultimately results in binding legislation based on the prior mandate given by the Council and the Parliament, the process is at risk of being criticised by certain stakeholders as not offering enough transparency.</p> <p>The enhanced use of stakeholder consultation and participation would contribute to easing some concerns regarding the obligation that may be imposed on the Member States and stakeholders. As a result of the specifications, ensuring higher engagement in the work and a sense of ownership of the results will considerably increase uptake.</p> <p>The Directive envisions a formal role of stakeholders through the European ITS Advisory Group, so an inclusion of a wider range of stakeholders would be in line with the approach already being implemented.</p> <p>For this purpose, the stakeholder platform(s) (the creation of which has been recommended for a number of actions) or existing cooperation platforms such as the iMobility Forum and its working groups could further assist the process by submitting input.</p>
	R.6.1.d Anchor the legal framework in a comprehensive ITS deployment strategy.	Medium	<p>The directive should service the purpose of this strategy, and enable the production of specifications as a complementary instrument to Connecting Europe Facility, Horizon 2020, TEN-T and regional funds, ITS Platform, ITS FwC for studies, etc.</p>
6.2 Decision support toolkit	R.6.2.a Further promote the use of the tool and complement the action by ensuring the tool's sustainability.	Medium	<p>From a technical point of view, the decision support toolkit is delivering the functions as envisioned,</p> <p>In the short-term, follow-up activities, in addition to the ones already in the pipeline, should be given a medium priority by the Commission so as to be in line with the pragmatic approach for setting priorities proposed in this evaluation.¹⁶⁴</p> <p>Continuation efforts and sustainability factors are essential and require careful consideration:</p> <ul style="list-style-type: none"> • In the short term, the pre-requisites for its use (e.g. an extensive evaluation culture) are currently not present and limits its use for decision makers. • There is a need for a longer term initiative (cultural changes are needed) in order for a satisfactory level of achievement to be reached within this action.

¹⁶⁴ The bulk of the work has already been conducted and the toolkit has been paid for, maximising it's utility is an example of cherry picking as presented by the "pragmatic approach"

Action	Recommendations	Priority	Justification
	R.6.2.b The vision behind Action 6.2 should be developed in the general context of Action 6.3 by ensuring that EU funding and Commission recommendations, with respect to national funding, support the development of an evaluation culture in the EU.	Low/ Medium	Evidence-based decision-making (ex-ante and ex-post evaluations) would increase the readiness of the public bodies, transport authorities etc. to take-up the use of the decision support toolkit. An increase in the evaluation culture would contribute to evidence gathering and awareness raising on the benefits of ITS.
	R.6.2.c In the longer term, continue to foster the evaluation culture, e.g. through ensuring that ex-ante and ex-post evaluation carried out in the context of EU funding are made public and thus available to the body responsible for the tool (see recommendation below).	Low/ Medium	The advantage of using similar methodologies in the EU will make it easier for inputs to be introduced in the tool and will increase the overall quality of the results, ultimately leading to a higher functionality and lower maintenance costs.
	R.6.2.d The tool must be handed over to someone who shows an interest in hosting and, most of all, maintaining and updating it. Practically, the tool could be handed over to a consortium through a competitive call similar to the process behind Easyway (co-funding).	Low/ Medium	In the longer term, the most effective solution would be for a European Agency (TEN-TEA f.x.) to centralise, maintain and promote the toolkit, provided that the pre-requisites for its effectiveness are met. Since important additional resources are required to maintain and update the tool, the associated costs should be borne (directly or indirectly) by users (Member States) to ensure the commitment of using the toolkit.
6.3 Funding guidelines	R.6.3.a A document summarising the main findings and proposed recommendations resulting from the study could be published.	Medium	The overall quality of the study is satisfactory, as it provides relevant knowledge and enables a better understanding of current funding practices, especially on how the public and private sectors could potentially cooperate in the field of ITS funding. Moreover, the study touched on many issues not previously researched or identified. Further, taking action to disseminate the main results of the study would increase the awareness of the results of the study among the stakeholder community at the expense of few resources and would successfully capitalise on the achievements of the action so far.

Action	Recommendations	Priority	Justification
	R.6.3.b Publish a guide on the complementary and accessible set of funding instruments available at the EU level.	Low	<p>The first phase of the action, i.e., collecting baseline information on (public) funding practices in the Member States and worldwide, was completed in early 2011, and the second phase of the action, i.e. the review and analysis of EU funding, was put on hold until the approval of the 2014–2020.</p> <p>Publishing a guide on the available set of funding instruments available at the EU level would be an effective way to increase the impact of the second phase of the action.</p> <p>In the short term, follow-up activities of this action should be given a low priority by the Commission so as to be in line with the pragmatic approach to setting priorities proposed in this evaluation.</p>
	<p>R.6.3.c In the medium/ long term, this action should be re-oriented to become one of the main pillars of a deployment strategy for ITS at the EU level.</p> <p>The objective for a revised action in terms of funding should be more ambitious and should strive to deliver a comprehensive and consistent funding strategy for ITS in the EU.</p>	High	<p>Progress in both Actions 6.2 and 6.3 greater than what has already been achieved requires an overhaul of the strategies and scope of both actions</p> <p>Coordinated deployment of ITS requires commitment from policy and decision makers at all levels, including both the aspect of supporting decision making (as proposed by Action 6.2) as well as access to funding (as envisioned by Action 6.3).</p> <p>The revised actions could contribute to the initial work that would form the basis for an overhauled deployment strategy for ITS at the EU level that should be launched and pursued in the medium/long term upon the finalisation (or close to finalisation) of the present Action Plan.</p> <p>This recommendation should be taken up with a high priority as part of the preliminary work required for creating a vision for a future deployment strategy in the EU, to be introduced towards the finalisation of the current Action Plan.</p>

Action	Recommendations	Priority	Justification
6.4 Urban ITS platform	R.6.4.a The urban ITS Expert Group should continue to be managed and chaired by the Commission, and should have a mandate to further provide more concrete, technical solutions for fostering the deployment of ITS solutions in a harmonised way. Sustaining the ITS expert group can be done in the form of a cooperative stakeholder platform.	High	In light of the successful implementation of the ITS Expert Group, sustaining the expert group is seen as a very important and adequate recommendation. Even though a direct follow-up of this action is being considered at the level of ERTICO, which is in a position to set-up an urban ITS platform for continuing the work, the Commission is still regarded as the best placed actor to provide the adequate role of facilitator and continue to chair and moderate the work of the expert group. Such an approach also raises the potential of a stronger mandate of the group, higher visibility and more synergy with other policy initiatives. As, at this stage, a move from ideas, technical developments and pilot projects to concrete, marketable and usable solutions for cities is appropriate, continuing the work of the expert group under the moderation of the Commission and with a stronger focus on actual deployment is in line with the medium/long term strategy to develop an EU deployment strategy. Such a working group would also be in line with the action plan on urban mobility ¹⁶⁵ in encouraging mutual learning and sharing of experiences and best practices to foster the development of sustainable urban mobility policies.
	R.6.4.b A manual containing guidelines, best practices and standardisation efforts could be edited, published and disseminated.	Medium	In order to capitalise on the work already conducted so far, additional efforts to disseminate the guidelines and ensure uptake by the wide stakeholder community should be invested. The main ideas of the guidelines could be transposed in the form of a text book targeted to local decision makers who should be encouraged to use open standards and technological matters in their urban solutions.
	R.6.4.c Assess the recommendations of the expert group on possible standardisation needs and follow up, possibly in the scope of existing actions (e.g. in Action Area 2).	High	Top-down elements are needed to ensure interoperability and continuity of services.
	R.6.4.d Bring ITS to the mainstream of urban mobility initiatives at the EU level.	n/a	The possibility of integrating the action within existing frameworks, such as Smart Cities, the urban mobility action plan and the promotion of sustainability urban mobility plans, should be explored.

¹⁶⁵ COM(2009) 490 final, Communication from the Commission to The European Parliament, The Council, The European Economic and Social Committee and the Committee of the Regions: *Action Plan on Urban Mobility*, Brussels, 30.9.2009,

Action	Recommendations	Priority	Justification
All (Action Area 6)	R.6.a Take up the action specific recommendations which relate to the use of a dedicated <i>integrated stakeholder platform(s)</i> as part of a new action within Action Area 6.	High	<p>An important aspect of cooperation and coordination in the area of ITS is represented by the participation and inclusion of stakeholders in implementing the Action Plan.</p> <p>As previously mentioned in this evaluation, there are limited resources at the disposal of the Commission dedicated to the implementation of the ITS Action Plan, implementing the necessary recommendations to establish a stakeholder forum at action level would not be feasible with the available resources.</p> <p>In order to ensure a higher level of efficiency and balance the need to establish action specific stakeholder platforms as recommended above with the limitation of resources and the need for prioritisation, a possible approach is to create a single platform with individual working groups which will have a narrow and limited mandate following specific policy developments and supporting a particular milestone.</p> <p>The proposed platform(s) could be built on the existing iMobility forum.</p>

APPENDIX 1
EVALUATION MATRIX

APPENDIX 2
SURVEY QUESTIONNAIRE

**APPENDIX 3
SURVEY RESULTS**

APPENDIX 4
LIST OF INTERVIEWEES

**APPENDIX 5
ACTION SHEETS**

**APPENDIX 6
OTHER SUMMARY TABLES**