



**iCars Network**

**Intelligent Cars  
Thematic Network**


## **Recommendations on Information and Awareness Activities**

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<p><b>Thematic Group (TG 2) Leader:</b></p> 	<p>Mihaela Ostafe, ERTICO</p>
<p><b>Contributions</b></p>	<p>Bjorn Hedlund – CLEPA; Michel Fond – ORANGE; Han Zwijnenberg – TNO</p>

<p><b>Project Manager</b></p> 	<p>Wil Botman FIA European Bureau Tel: +32 2 282 08 10 E-Mail: <a href="mailto:w.botman@fiabrussels.com">w.botman@fiabrussels.com</a></p>
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## **1. Introduction**

### **1.1 Intended audience**

This document was prepared for the European Commission.  
It is also open for public consultation to any third party interested by the iCars Network WP2 activity and recommendations on ICT information and awareness actions generally.

### **1.2 Objective of the document**

This deliverable represents the outcome of the exchange of information and analysis of best practices and relevant cases studied in the iCars Thematic Network WP2. It is a compilation of recommendations which aims at leading to a quicker and more intense take-up of ITS in the design and production chain and to increasing consumer demand for ITS products.

### **1.3 Structure of the document**

The document starts with reminding to the reader the main work-lines, methodology and previous deliverables of WP2.

The next chapter focuses on the actual results from the data collection, which is two-fold (meta-information – materials and studies on information and awareness actions in 2007-2009 – and questionnaire-based study results).

This is followed by a chapter which focuses on the results' assessment.

Chapter 4 contains recommendations, as well as reflections on the work performed while the final chapter provides a list of dissemination activities in 2010-2011.

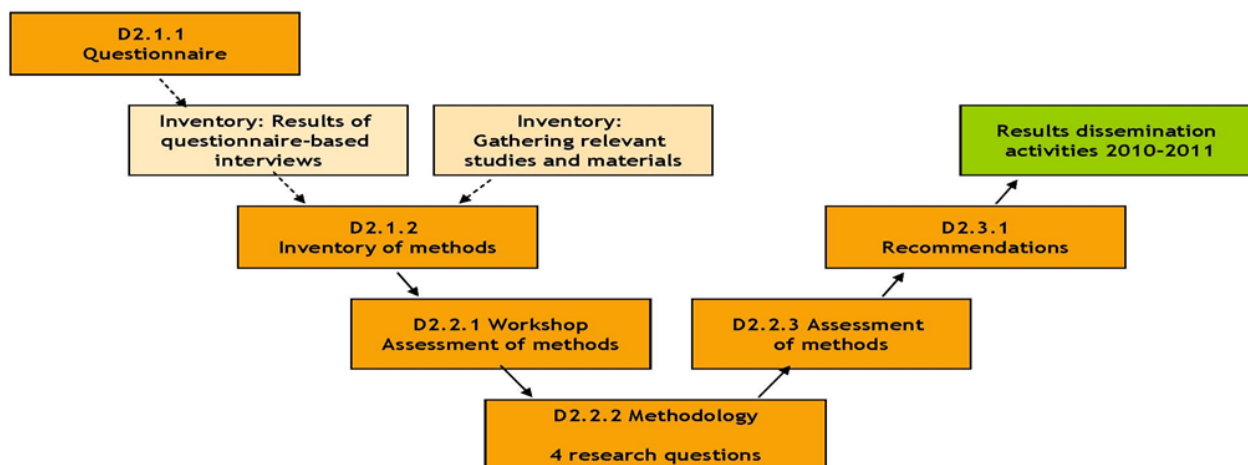
## 2. Information and awareness for ICT technologies - context 2007-2009

One of the four focal directions of the iCars Thematic Network project was to identify information and awareness raising best practices performed by different stakeholders and to compile a shared knowledge of the effectiveness of various information and awareness activities in the ITS domain.

With this objective, the WP2 of iCars Network included the following steps:

1. Development of a questionnaire designed to highlight the existing awareness activities undertaken by a wide range of stakeholders, in order to highlight the trends in communicating new technologies in the ICT domain,
2. Conducting interviews with selected stakeholders involved in ITS and ICT for transport,
3. Gathering information and identified materials in an inventory, representing background information and awareness data,
4. Construction of an inventory of what has been done in terms of raising awareness about ICT in Europe from 2007 to 2009,
5. Selecting the appropriate methodology and assessing the gathered data, pointing out the results of the questionnaire-based study and the summary description of the studies and materials gathered in the inventory of methods,
6. Making recommendations on information and awareness activities, aiming at bringing to a quicker and more intense take-up of ITS in the design and production chain and to increasing consumer demand for ITS products (scope of the present document).

The WP2 iCars Network lines are summarised by the picture below:



**iCars Network WP2  
Information and Awareness**

The following subchapters summarise the work lines, deliverables and results of the WP2 in the last two years since the iCars Network project was launched.

## 2.1 Information and Awareness Questionnaire (D 2.1.1)

First deliverable of WP2, the information and awareness questionnaire was prepared to highlight already existing awareness activities undertaken by different categories of stakeholders and to point out the trends of their awareness activities. The focus of the questionnaire is to identify actions ranging from pure awareness to deployment, performed by various stakeholders, targeting three groups:

- Authorities,
- Business-to-business,
- End Users.

Moreover, the questionnaire was conceived in the light of four **research questions** which guided the creation of the D2.1.2 Inventory of methods:

1. Which are the main stakeholders addressing the ICT systems?
2. Which are the ICT systems addressed, what is their stage of deployment and which stakeholders are involved in their deployment?
3. Which awareness actions were developed to promote and inform about the identified ICT systems, and which actions are planned in the future by different stakeholders?
4. Were the awareness actions identified successful/ effective? How is the effectiveness of the actions measured? What is the general view of the stakeholders on different actions effectiveness?

The questionnaire looked at all in-vehicle systems, including stand alone systems, cooperative systems (infrastructure or vehicle-oriented), embedded or nomadic devices.

In order to obtain more insightful data, the four research questions above were translated into 28 questions, classified in six groups:

- A. General identification of the interviewed organizations,
- B. ITS systems the organizations are coping with,
- C. Deployment phase of the systems (proof of concept, pilot, roll out),
- D. Actions with respect to awareness raising activities,
- E. Evaluation of the actions and considerations for successful actions,
- F. Remarks and suggestions.

The questionnaire was circulated to a wide range of stakeholders involved in ITS activities: government representatives, road safety organizations, public authorities, research organizations, ITS service providers, ITS and users associations, telecom industry, automotive clubs, road operators and road engineering services representatives.

41 organisations participated in the study from March to November 2009, and the results of the study were part of the next deliverable of WP2, D2.1.2 Inventory of methods.

## 2.2 Inventory of Information and Awareness methods (D2.1.2)

As a great number of awareness activities were carried out by stakeholders in the past years, WP2 prepared an Inventory of methods used in the promotion of the ICT technologies for transport in the period 2007 – 2009.

The materials were gathered by following two paths:

1. Materials from previous relevant awareness actions, events and studies from the given period were gathered in the Inventory;
2. A study was developed by WP2, based on deliverable D2.1.1 Questionnaire on information and awareness.

Both methods of gathering data followed the four research questions listed in chapter 2.1.

The data was gathered in the period June 2008 - November 2009, looked at the ITS context of 2007-2009 and aimed at providing an overview of awareness actions.

Moreover the Inventory created a basis for comparing the existing ICT information methods and their effectiveness - under the iCars Network WP 2 analysis.

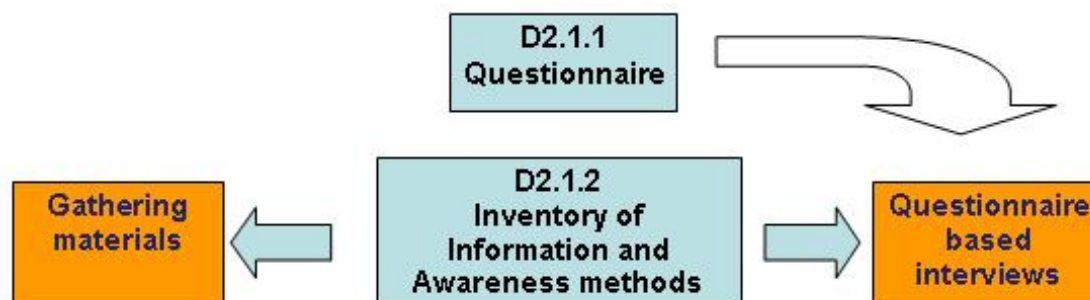
The Inventory includes:

### 1. Description of information and awareness materials and studies in 2007-2009

About twenty types of activities are listed under the identified information and awareness materials 2007-2009. The materials and data gathered in the inventory came from various sources and studies, and looked at information and awareness actions targeting three different categories: authorities, business-to-business and end users.

### 2. The WP2 questionnaire-based study

The study approached 63 stakeholders involved in ITS, out of which 41 filled in the questionnaire. The results of the study are showed in D2.1.2 Inventory of methods.



**Inventory of Information and Awareness methods structure**

### 2.3 Methodology overview (D2.2.2)

In order to assess the data gathered in D2.1.2 Inventory of methods (studies/materials and questionnaire-based study) appropriate methodology was selected and described by D2.2.2 Methodology overview.

As the materials gathered in the Inventory were not homogenous, different methodological approaches for their assessment were proposed.

However, the common methodological element was represented by the following four research questions, which later also guided the data assessment:

1. Which are the main stakeholders addressing the ICT systems?
2. Which are the ICT systems addressed, what is their stage of deployment and which stakeholders are involved in their deployment?
3. Which awareness actions were developed to promote and inform about the identified ICT systems, and which actions are planned in the future by different stakeholders?
4. Were the awareness actions identified successful/ effective? How is the effectiveness of the actions measured? What is the general view of the stakeholders on different actions effectiveness?

A summary description was envisaged to be provided for the materials gathered in the Inventory, following the questions above.

The materials were classified according to the categories of actors targeted by the actions described:

1. Awareness of public authorities,
2. Awareness in the business-to-business area and
3. Awareness of the end-users.

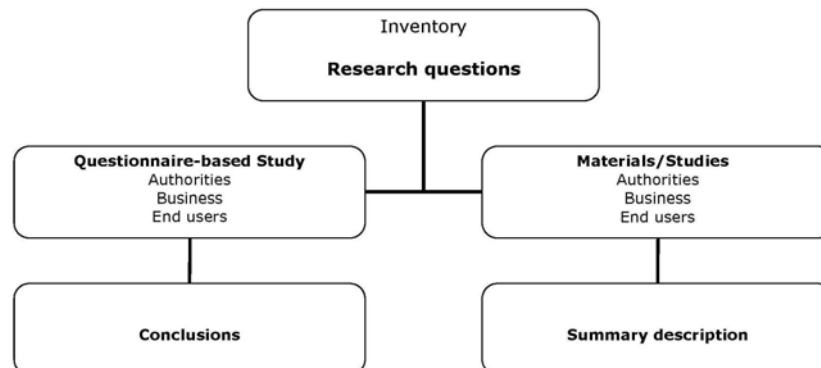
With regards to the results of the questionnaire-based study: these were agreed by the WP2 Consortium to represent the core part of the WP2 Information and awareness assessment.

A list of elements to guide the analysis of the six areas in the questionnaire was looked at by D2.2.2 and an outline for the assessment of the data was agreed.

Areas in the questionnaire:

- A. General identification of the interviewed organizations,
- B. ITS systems the organizations are coping with,
- C. Deployment phase of the systems (proof of concept, pilot, roll out),
- D. Actions with respect to awareness raising activities,
- E. Evaluation of the actions and considerations for successful actions,
- F. Remarks and suggestions.

#### Assessment outline:



## **2.4 Assessment of methods (D2.2.1 and D2.2.3)**

The following step was to analyse the gathered data and to highlight the results of:

1. questionnaire-based study and
2. summary description of the studies and materials gathered in the Inventory of methods.

The analysis started by a workshop held between iCars Network WP2 partners in summer 2009. The conclusions of the workshop (which took place in two parts, to assure full participation of the Consortium in the assessment discussion) consist of a list of decisions and actions which are highlighted by deliverable D2.2.1 Workshop on Assessment of methods.

The summary description of the materials in the Inventory and the final conclusions related to the questionnaire-based study are provided by deliverable D2.2.3 Assessment of methods.

## **2.5 Recommendations on information and awareness activities (D2.3.1)**

The last step of WP2 activities on Information and awareness is:

- to come up with a compilation of recommendations with regards to information and awareness methods used in the ITS area, and
- to make recommendations on information and awareness activities aiming at bringing to a quicker and more intense take-up of ITS in the design and production chain and to increasing consumer demand for ITS products.

This is the scope of the present document, final deliverable of WP2 Information and Awareness, D2.3.1 - Recommendations on information and awareness activities.

### 3. Analysis and interpretation of results

The analysis of data gathered in the Inventory of methods (2007-2009 studies and materials and D2.1.1 questionnaire-based interviews with selected stakeholders involved in ITS and ICT for transport) led to a series of conclusions which will guide the WP2 recommendations' formulation.

The following two subchapters list the conclusions of the assessment of methods, (for a more detailed assessment discussion see D2.2.3 Assessment of methods).

#### 3.1 Conclusions from the studies and materials

All the activities looked at in deliverable D2.2.3 represent a considerable investment of efforts and funds in the area of raising the awareness level regarding mainly eSafety technologies.

In spite of all these efforts the penetration rate of eSafety technologies is surprisingly low, fact also concluded by the "eSafety Implementation status survey report"<sup>1</sup> published in 2007 by Technische Universität München.

The most clear explanation for this situation resulted from the studies consulted is the fact that the independent vehicle manufacturers, which are connected with various distributors and sales representatives (in most cases independent, legally separated from the manufacturers), *have shown very little interest in promoting these new technologies.*

The massive awareness raising activities aimed at the end-users did surprisingly not create the market demand for eSafety technologies, which would have normally been expected.

However, as highlighted in the conclusions of the WP2 questionnaire-based study, three types of awareness actions have been identified as successful/effective in enhancing the deployment of ITS systems:

- Awareness of public authorities,
- Awareness in the business-to-business area and
- Awareness of the end-users.

The following summarises the conclusions related to each of the actions discussed by the D2.2.3 Assessment of methods.

#### Actions aiming at the awareness of public authorities

##### 1. eSafety Support

The widespread eSafety Forum activities and the dissemination actions of the eSafety Support project were of significant importance for safety awareness-making at early stages. eSafety Support project participated in numerous national and international events, informing and raising awareness about safety.

The eSafety Observers Group activities also contributed at raising awareness of public authorities around Europe on safety policy. The Group consisted of a panel of representatives

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<sup>1</sup> "eSafety Implementation status survey report", Technische Universität München, 2007 (the study can be consulted in Annex 3.3 of deliverable D2.2.3 Assessment of methods).

selected from the EU Member States, actively involved in national industry, policy or R&D activities. Regional and European level meetings took place regularly with the goal of communicating eSafety information at the national level between the Member States and the European Commission. However, their impact in terms of awareness would be rather difficult to assess.

The eSafety Support project concluded in September 2009 and received a successor in the iCar Support project, under the management of Directorate General Information Society and Media.

## **2. eSafety Aware activities**

The activities of eSafety Aware also played a key role in starting the awareness movement for safety technologies. Numerous awareness actions took place in most European countries, aiming at raising awareness about safety systems (and predominantly ESC).

## **3. CLEPA technology days**

CLEPA Technology Days have played a major role in making the members of the European Parliament, European Commission and Council aware of the fact that major research activities in the ICT area have been initiated and industrialised by the European automotive suppliers. The previous opinion that the activities were started by the OEMs (manufacturers of the vehicles) has been in most cases corrected through the participation of the suppliers at the Technology Days events.

The next event in this series will take place on 27 October 2010.

## **Actions aiming at business to business awareness**

### **1. Retailer awareness actions online research on virtual show rooms**

Specific results from these actions are extremely difficult to assess. The intention of the OEMs to demonstrate the new technological possibilities online via their websites is considered valuable and appreciated. However, a follow up by training the sales organisations and motivate them to offer the safety systems and technologies to the customers would probably increase considerably the results of the online efforts.

### **2. Technical Forums**

These actions have shown the importance of bringing the new technical possibilities, like nomadic navigation systems, into practical applications and everyday use.

The navigation systems and digital maps show a totally different penetration rate compared to all the other devices that can be regarded as belonging to the eSafety family.

The sales of these devices is nothing but sensational and this success can, at least partly, be explained by the fact that mass media has issued a lot of positive information about these devices. They are also possible to be purchased separately and thereafter attached to the vehicle where they will be used.

This eliminates the need for promotion and information from the partly less knowledgeable and interested sales representatives of the distributors.

## **Actions aiming at awareness of the end-users**

### **1. Benchmarking study on activities in promoting and deploying Intelligent Vehicle Safety Systems in the EU (report written by TNO)**

The benchmarking report is one of the pillars on which many of currently ongoing awareness activities in the ITS field are based.

Its conclusions with regards to the willingness to pay for safety systems, coordination of activities at the national level and the highlighted differences among European countries in terms of safety systems deployment represented a background for other studies and projects in the last years.

The results of the TNO benchmark study also guided the choice of countries to be invited to participate in the WP 2 questionnaire-based study.

### **2. National Automobile Clubs awareness actions**

This was a valuable addition to the "eSafety Implementation status survey report"<sup>2</sup> of 2007 regarding the awareness of technical eSafety solutions among the members and affiliated persons of the automobile clubs. In general it must be acknowledged that these actors are at a much elevated level when it comes to awareness of new technologies in the automotive area. It should be regarded as highly important that these actors, through their networks, can perform a very valuable information service, covering new ICT technologies.

### **3. Online research on the marketing sections of the car manufacturers/suppliers websites**

Specific results from these actions are very difficult to assess. The initiative of the OEMs to demonstrate the new technological possibilities online on their websites is valuable in terms of educating the end user and is considered an useful marketing tool, currently used by all stakeholders in this category. However, a follow up by training the sales organisations and in terms of motivating them to offer new ITS technologies to the customers would increase the results magnitude considerably.

### **4. CVIS end-user's survey**

One of the most important aspects revealed by the study is that, when buying a new car, the European drivers' first priority *is safety, followed by price*. European drivers consider safety the most important factor when buying a new car and they are willing to fit their cars with new systems - if they imply a significant increase in safety, even if this means an increase of the car price, variable that was considered as second priority among the drivers.

However, one can only assume that they will do so if the safety systems are available on the market (deployed) and *if they are aware of their existence* on the market.

Thus, the importance of training of the sales organisations/ distributors staff, as well as their willingness to spend time in explaining the new technologies to the customers is highlighted once more.

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<sup>2</sup> "eSafety Implementation status survey report", Technische Universität München, 2007 (the study can be consulted in Annex 3.3 of deliverable D2.2.3 Assessment of methods).

## **5. eSafety Support activities (end user oriented)**

The third pillar of the Intelligent Car Initiative promoted the dissemination of the potential of intelligent vehicle systems to raise drivers and policy makers' knowledge, stimulate user's demand and create socio-economic acceptance, activities in which eSafety Support was actively involved (through its work packages 5 and 6, user outreach and dissemination). At the national level, several campaigns were organised to promote to the end user specific safety systems, including demonstrations, hands-on-the-wheel tests, teaching modules on safety at university a.s.o. However, even if the interest raised by these activities was high, the results of the actions are difficult to assess, as no evaluation of the actions was developed during the project.

## **6. Other awareness actions: ITS World Congresses, PReVENT**

This kind of events is mainly aimed at professionals who are already informed about the new ICT technologies to be implemented in the safety field in the near future. They are valuable in terms of networking at a national and international level, and they are in many cases further initiators of similar actions aimed at the general public, in order to spread knowledge about the new technologies that become available for incorporation in new vehicles.

### 3.2 Conclusions of the WP2 questionnaire-based study

This section will show the conclusions of the questionnaire-based study in relation with each of the four research questions.

#### 1. Research question 1: Which are the main stakeholders addressing the ICT systems?

The study **highlights**:

- 1) The targeted participants for the interviews were relevant stakeholders addressing the ICT systems, who offered a meaningful material for the WP2 analysis. During the study several other relevant stakeholders' categories were identified and included in the research.
- 2) Part of the stakeholders' object of activity regards the ICT systems, and not the development of awareness actions, thus part of the questions in the questionnaire were irrelevant for a number of participants.
- 3) Interviewing more stakeholders from each category could have given a better overview of practices used by each category of stakeholders. The amount of data gathered by the WP2 study permitted only a qualitative analysis, but a numerical, quantitative exercise on the same topic would be very useful.

With a view to the **logistics** of the study:

- 4) As explained in the previous deliverables, many difficulties in approaching the targeted stakeholders were encountered by the WP2. As the study regards information and awareness actions, in many cases the relevant responsible people for answering the questions were part of marketing and information departments. In some cases the information needed was confidential (budget foreseen or used for developing awareness actions, research programmes information etc) and was not possible to be obtained; in other cases special permission was required from the organisations' management for sharing the information.
- 5) WP2 initially tried gathering the experts on ICT systems information and awareness actions to discuss the topics approached by the questionnaire in a workshop. No interest has been shown in such event, as the information discussed is considered by some organisations (vehicle manufacturers in special) as confidential.

**2. Research question 2: Which are the ICT systems addressed, what is their stage of deployment and which stakeholders are involved in their deployment?**

- 1) From the totality of the systems identified by the study, 59% were safe mobility systems, 31% smart mobility systems and just 10% clean mobility systems.
- 2) Most of the systems identified in each category are in their roll out phase.
- 3) Responsibility for ITS systems deployment: for all systems' deployment the actors considered responsible were the industry, EU institutions, governments and road operators.  
It would be highly interesting to understand how the opinion about ITS systems deployment responsibility varies among the different categories of stakeholders, as the amount of data gathered by the present study does not permit drawing any conclusions in this direction.
- 4) Key elements in ITS systems deployment: sharing of knowledge between stakeholders, creating cooperation between actors/value chain, liability and users acceptance turned to be considered important elements in the ITS systems deployment, along with the creation of business models.

**3. Research question 3: Which awareness actions were developed to promote and inform about the identified ICT systems, and which actions are planned in the future by different stakeholders?**

- 1) The car manufacturers had undertaken the most diverse range of awareness actions; no participation was identified in terms of providing legislation, however all the rest of the awareness actions were covered;
- 2) The road operators interviewed expressed an interest in signing MoUs and participating in providing legislation actions in the near future ;
- 3) Being more open to signing MoUs seem to be a general tendency of all categories of stakeholders involved in the study;
- 4) The users associations expressed an interest in participating in future trial periods;
- 5) The research organisations expressed their interest in preparing flyers and information material regarding ICT systems, to inform about and promote the results of their activities in the field;
- 6) The car manufacturers are the only category who undertook financial incentives' actions and who also expressed their interest in such actions in the future;
- 7) Most popular actions: all categories of stakeholders actively participated in ITS organisations activities, participated in exhibitions and lobbying activities at the national level, and expressed their interest in undertaking these types of actions in the future;

- 8) All categories of stakeholders expressed their interest in participating in PR campaigns focused on road safety in the near future;
- 9) Most actions are organised for the deployed systems;
- 10) Most important reasons for selecting a certain type of action: 1. information (29%), 2. increasing safety objectives (21%) and marketing oriented reasons (16%). As information reasons is in most cases also part of the marketing strategy, a total of 45% results for this category of reasoning of selecting actions, followed by 21% for increasing safety goals.

**4. Research question 4: Were the awareness actions identified successful/ effective? How is the effectiveness of the actions measured? What is the general view of the stakeholders on different actions effectiveness?**

- 1) A very limited number of organisations measure the effectiveness of the awareness actions they undertook.
- 2) Most of the organisations considered their actions successful but did not give a reason for this. Sometimes the effect of the actions was described, but no indicators were used for measuring the effects.
- 3) The reasons and explanations formulated by the stakeholders when asked what makes them considering their actions successful represent a concrete base for putting in place indicators and starting measuring the effectiveness of the actions in the future. The study also provided a list of indicators used and actions' effects description, even if no numerical relevance of the indicators could be seen from the results.
- 4) Part of the organisations expressed that measuring the return of awareness actions can be very difficult, and that to evaluate the success of a certain action is always tricky, as a lot of factors can contribute to raise awareness at the same time, and this is not obvious from the visible effects.
- 5) With view to enhancing the deployment of ITS systems, the actions considered most successful by the participants in the study were:
  1. organising public awareness campaigns or promotion activities to create awareness amongst the customers/car drivers,
  2. financial support to stakeholders to enhance R&D activities,
  3. tax reductions or other financial incentives from the government.

## 4. Recommendations on information and awareness activities

The final objective of the iCars Thematic Network is to make recommendations about awareness raising activities, aiming at bringing to a quicker and more intense take-up of ITS and to increasing consumer demand for ITS products, for each of the three following groups:

- Authorities,
- Business-to-business,
- End Users.

The recommendations below reflect the conclusions of deliverable D2.2.3 Assessment of methods and give an overview of potential actions of how can ITS can be further approached and promoted. In some cases the recommendations refer to an awareness/information action identified and described in D2.1.2 Inventory of methods (more detailed information about each example used in the following subchapters is available in D2.1.2 Inventory of information and awareness methods) or explains further the action(s) suggested.

It would be valuable to consider the recommendations resulted from this study as food for thought for future or ongoing projects' actions: EuroFOT and FOTnet activities, the CVIS follow-up etc.

### 4.1 Authorities

With regards to awareness raising actions, the following are considered to be effective in enhancing the deployment of efficient ITS systems:

1. To support more effectively mass information campaigns.

Participation in public awareness events and support given to information actions is considered very important (see description of eSafety Support and eSafety Aware promoting safety campaigns, and participation in national and international conferences and exhibitions (ITS World Congresses)).

2. To push up tax reductions and other financial incentives. Such actions effectively replace awareness campaigns, as press takes up this opportunity in length.

WP2 study identified that the financial incentives (price cuts, reductions) were mainly used so far by the car manufacturers. Cooperation in supporting such actions between the other stakeholders involved in the ITS field, and especially the public authorities and national governments support, would lead to a more intense take-up of the new ITS technologies. The efforts and costs of informing about and promoting these actions would be then minimum, as the press would take in a natural manner the message to the public/end-users.

3. To select awareness tools to raise first the awareness of the stakeholders for deployment and then of the public. At the beginning of the deployment phase it is more important to raise the awareness of the stakeholders for deployment than the public awareness. Creating awareness among the public will take longer and will start later in the development phase.

Raising awareness for eCall is a good example: first, the stakeholders which can support the eCall deployment were informed about the latest eCall related development and invited to

participate in the system's deployment. The mass campaigns targeting the public are being left for a later stage, when the system would become available on the market.

4. To define a working frame for future efficient actions at the European level. The ITS Action Plan, as defined end 2008 by the European Commission, is considered an effective awareness raising action, as it gives a working frame and defines systems for future actions. In order to be efficient and to progress, a common working frame is essential; the European ITS Directive will be very useful in this respect.
5. As the EU policy focus changed in the last years from safe to safe, smart and clean mobility, the awareness actions must also reflect this.

It is crucial that the actions are based on policy strategy and actions with a wide focus at the European level. The ITS Action Plan and ITS Directive have in focus increasing safety at the European level and support the deployment of the new ITS technologies. Harmonising information and awareness actions at the European level and following the directions of the EU policy frame represents a key element, as well as reflecting the changes met in the policy frame by the awareness actions planned.

6. Being more open to signing MoUs seem to be a general tendency of all categories of stakeholders involved in the study; thus, creating more policy opportunities to commit to systems deployment shall be considered at the European level.
7. To enhance the deployment of public transport information systems. Promotion has to be made among local/regional authorities, national authorities and private companies involved in public transportation systems. Moreover, the information systems must be easy to use and the end-users must be made aware of their availability.

To support the deployment of the new technologies, not only expressing the commitment at the European level is important, but also local/regional/national commitment, information and communication.

One way to express commitment internationally is by signing a Memorandum of Understanding which will lead to participation of the organisation in further actions regarding a certain technology. At the local/regional level information actions are needed to assure consistency, but also the participation of all the important stakeholders involved locally in the deployment of certain technology (the case of the public transport information systems).

8. To support R&D projects providing concrete conclusions about driver distraction, human-machine interaction and ergonomics.

The WP2 study identified that most of the stakeholders involved in the questionnaire-based study participate in R&D programmes targeting ICT and ITS technologies. The governments participating in the study indicated that they dedicate considerable efforts and budgets to R&D programmes, mainly focused on road safety issues, technological innovations, the enhancement of efficiency in transport and environmental issues. Maintaining the public authorities' participation in such studies and enhancing their involvement especially on the driver distraction, human-machine interaction and ergonomics issues is considered of a great importance. It is also important to consider that in most cases the results of such programmes are public.

9. To overcome the "resistance to change" among national authorities and to break down

the reluctance of national authorities against the lack of safety of GPS systems.

Public information campaigns at local/regional/national level and demonstration are considered good methods of overcoming miss-communicated messages.

In the case of GPS systems, cooperation between the public authorities and the map makers is considered highly valuable.

10. To aggregate, at national and international level, local and regional information which is collected by local and regional publishers and service providers which are essential actors of ITS systems and services. Local information can then be aggregated to the national and international level, the public authority keeping the responsibility for decisions that all actors of ITS systems must transmit to users in a consistent manner.

It is important to keep the track of the information spread to the public in past awareness actions – and, where available, data on how effective these actions were, lessons learnt etc.

In most cases the projects keep a good track of the actions developed and run (see eSafety Support actions and eSafety Aware campaigns, as well as the National Automobile Clubs awareness actions).

#### **4.2 Business-to-business stakeholders**

With regards to awareness raising actions, the following are considered to be effective in enhancing the deployment of efficient ITS systems:

1. To ensure an efficient cooperation between all stakeholders of the domain: equipment suppliers, telecom industry, car manufacturers, research organisations. Today new players are entering the ITS systems' market. These actors must work in close cooperation with the current ITS actors in order to provide end users with quality information, consistent with existing information systems and their existing ergonomics. For a large deployment of ITS systems and services, all parties must be involved.

2. To ensure the continuity and the consistency of information presented to end-users for current ITS systems already deployed, as well as for future in-vehicle high-technology information systems. Tomorrow ITS systems will be cooperative and integrate direct communication between vehicles and infrastructure (vehicle to infrastructure). To achieve this goal of direct communication between the central control post and drivers, it will be necessary to embed inside vehicles "virtual VMS" and "emergency callbox" communicating directly with the infrastructure. To ensure continuity between the current ITS systems and the future ones, and also the consistency of the information presented by the two systems, future ITS systems will have to meet two conditions:

- provide users with information which is complementary and consistent with ITS information systems already deployed, and
- keep the ergonomics and HMI which users are currently accustomed with.

It is likely that in the future all vehicles will be equipped with embedded "virtual VMS" and "emergency callbox", this new equipment belonging to the basic equipment of all vehicles, even "low cost" vehicles. These new equipments for communication with the infrastructure will allow progress towards the "smart road of the future" without which automatic vehicles will not exist.

A couple of business to end users messages could also be highlighted:

1. To ensure mass communication on the benefits of “always on” connected vehicles and telematics services provided inside vehicles.
2. To strengthen among the public the message that transport optimisation is a collective optimisation and not a search for individual solutions. The optimum regulation road lies in optimising public and collective actions, and not in promoting individual solutions.
3. For car industry sales representatives, to highlight the importance of presenting and explaining to the customers the new ICT technologies available on the market.
4. To make an effort to better inform the mass market end users and provide them a better knowledge of available products on the market. For example, different vehicle manufacturers call the same (or very similar) systems in different way, which for the end user can be somehow confusing.

### **4.3 End users**

Two categories of end users must be clearly distinguished, as the context in which they make decisions are completely different:

#### **4.3.1 Private buyers**

Private vehicle customers are usually discussing purchases just with the responsible sales persons. Thus, if the knowledge of and willingness to incorporate these new technologies in future purchases of vehicles is low among the sales representatives, the technologies will not be communicated to the buyers, and remain therefore unsold.

It is important to assure that the technologies are made known to the private users, thus facilitating their penetration in the market and the increase of road safety implicitly.

It is important to consider that, as concluded by other studies<sup>3</sup>, the private buyer makes a consideration between all aspects of a new car, out of which ITS systems are just another, in the line of metallic paint, heated seats and a navigation system. However, as discussed by the CVIS end-users survey, the European drivers first priority when buying a car is safety, followed by price. Thus it can be expected that, if the buyer is correctly informed, the ITS systems penetration will increase at the European level.

#### **4.3.2 Professional buyers**

The situation is different in the area of purchases of company vehicles, where the purchasing person usually has a deeper knowledge of modern technologies and the desire to protect the employees that are going to drive the vehicles. This does to some extent explain the differences in penetration rates of eSafety technologies in Northern Europe (where most new vehicles are purchased as company vehicles) and Southern Europe (where the majority of

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<sup>3</sup> CVIS deliverable D.DEPN.4.1: “Stakeholder utility, data privacy and usability analysis and recommendations for operational guarantees and system safeguards: Europe (2007)

vehicles are purchased by private parties). This is also expressed by the "eSafety implementation status survey report"<sup>4</sup>.

With regards to awareness raising actions, the following are considered to be effective for both categories of end users in enhancing the deployment of efficient ITS systems and promoting the increased implementation and use of e-Safety technologies:

1. To organize large scale public awareness campaigns or promotion activities to create awareness amongst the customers/car drivers. The goal could be achieved for example by organization of large scale FOTs involving mass-market end users as experimenters, and relaying the results by large TV and radio campaigns. The expected result would be:
  - o to overcome the "resistance to change" existing among many customers
  - o to "convince" end users that industrial companies make concrete efforts to supply systems which are available in packages which can reasonably raise their interest;
2. To implement tax reductions or other financial incentives from the government;
3. To stimulate the training and education of sales personnel about the availability of such systems and through them raise awareness with the private car buyers.

Both categories of end users would benefit the deployment of such awareness actions. However, this is a huge task to be undertaken by all stakeholders in order to spread the knowledge and desire to install these new technical solutions in the vehicles to be purchased in the future. In some cases, such as ESC (Electronic Stability Control) and tyre pressure monitoring the road of compulsory legislation has been taken in EU, see Official Journal, (as well as in USA) in order to assure that all newly produced vehicles are equipped with these technological solutions.

However, the road of legislation is not advisable in all cases, as some areas of the new e-Safety technologies are not possible to introduce on a large scale. Some eSafety technologies are too expensive for mandatory introduction, which would jeopardize vehicle affordability.

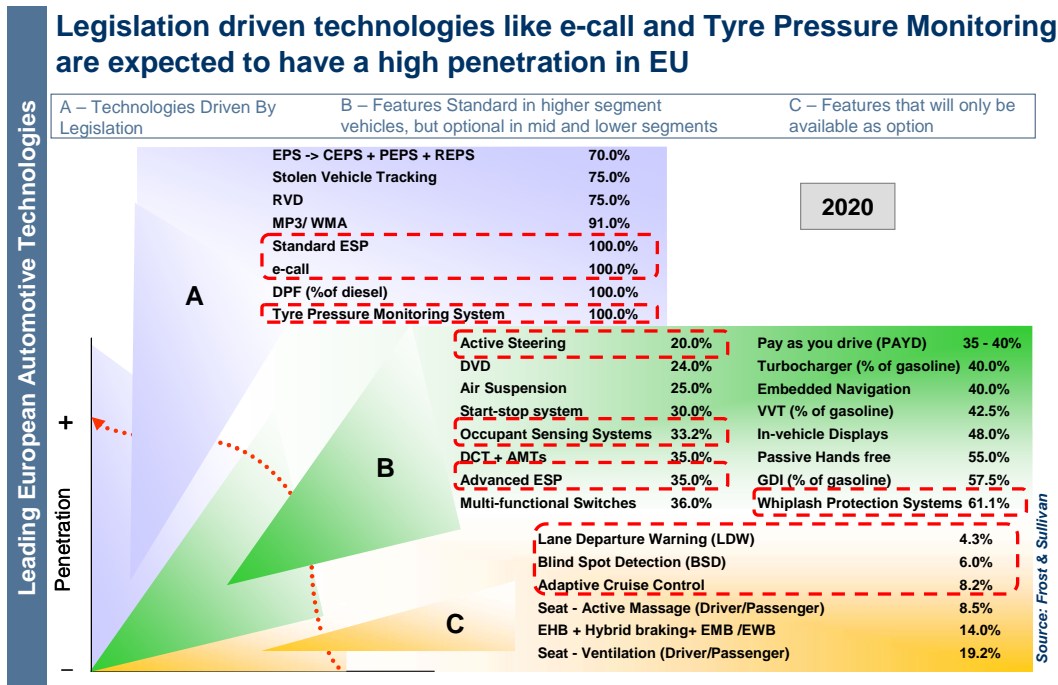
The absence of legislation leads to situations where it takes a long time to introduce new technologies in vehicles - the long ramp up (about 20 years) necessary to equip all vehicles with ABS, safety belts or airbags are relevant examples.

See expectations from Frost & Sullivan<sup>5</sup> for difference in penetration rate on legislation. This also indicates which systems are better for legislations compared to others. For the eCall and tyre pressure monitoring system the MoUs are currently open.

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<sup>4</sup> "eSafety Implementation status survey report", Technische Universität München, 2007 (the study can be consulted in Annex 3.3 of deliverable D2.2.3 Assessment of methods).

<sup>5</sup> "The future of Advanced Driver Assistance Systems in Europe at the ACE 2008 Technology on board conference", Nick Ford presentation (2008), Frost & Sullivan



With regards to ‘educating’ the end users: an information and awareness action considered valuable and with a great educative potential by the WP2 was the Demo theatre organised during the ITS World Congress in September 2009 in Stockholm. The effectiveness of this action could not be measured, but the action became after just one day very popular and every session was fully booked. That showed the interest of learning more about the ICT technologies and also pointed out that this can also be done in a fun and catchy manner for the public, (learning from this, a similar demo theatre was also organised during the exhibition “Intertraffic Amsterdam”, in March 2010, with the same success).

As a general recommendation for **all stakeholders and awareness actions**: WP2 study, after assessing all data in the Inventory of methods (studies/materials and questionnaire-based study results) came to understand that in most cases the stakeholders involved in ITS organise an impressive number of information and awareness actions, but that generally they *do not evaluate the effects of these actions*.

Some of the stakeholders interviewed explain that to evaluate the information and awareness actions is a challenging exercise, as the market is in a permanent change. It is thus rather difficult to attribute a certain effect in the market to just one action/ series of actions.

However, WP2 study identified a series of indicators used for evaluating part of the actions referred to in the questionnaire-based study. They can represent a starting basis for the stakeholders interested in methods of evaluating their awareness actions (below). WP2 study admits that in part of the cases it is difficult or even impossible to fully understand the effects of an awareness action. However, evaluating the actions is considered a valuable exercise on a general basis and is thus recommended as best practice for all awareness actions envisaged.

<b>Indicators used by</b>	1. number of supplied units
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<p><b>the stakeholders interviewed for evaluating their information and awareness actions</b></p>	<ol style="list-style-type: none"> <li>2. number of licences sold</li> <li>3. legislation updates national/EU level</li> <li>4. consultations done by EU</li> <li>5. number of accidents, fatalities, injuries</li> <li>6. number of users of the websites</li> <li>7. number of articles published</li> <li>8. number of participants in events</li> <li>9. organisations' growing memberships</li> <li>10. media coverage generally – press coverage, radio stations, TV adverts</li> <li>11. bilateral consultation with members successful</li> </ol>
<p><b>Described effects of the information and awareness actions</b></p>	<ol style="list-style-type: none"> <li>1. decreasing number of accidents fatalities and injuries comparatively with the previous period</li> <li>2. good results concerning awareness raising among stakeholders</li> <li>3. reaching the target groups</li> <li>4. achievement of active participation of all relevant stakeholders</li> <li>5. journey time reliability</li> </ol>

## **4.4 Reflections**

This section aims at looking back to the WP2 objectives (4.4.1) and the limitations of the study and analysis performed (4.4.2). Recommendations for the development of future studies on similar issues will also be provided (4.4.3). Moreover, the WP2 meetings and discussions on information and awareness highlighted a series of valuable ideas related to the study, but which could not be integrated in the WP2 results assessment, as they did not mirror any of the WP2 research questions. These ideas and highlights are listed under sub-chapter 4.4.4.

### **4.4.1 Objectives of WP2 and study relevance**

The iCars Network WP2 consortium brought together key experts in dissemination and awareness activities, to share knowledge of the effectiveness of information and awareness activities undertaken in the past years. Best practices were discussed and recommendations meant to assure an increase in the take-up of ITS in the design and production chain, as well as an increase in the consumer demand for ITS products were formulated.

### **4.4.2 Study limitations**

As explained in deliverable D2.2.2. Methodology overview, many difficulties were encountered in approaching the targeted stakeholders by the WP2. As the study regards information and awareness actions, in many cases the relevant responsible people for answering the questions were part of marketing and information departments. In some cases the information needed was confidential (budget foreseen or used for developing awareness actions, research programmes information) and was not possible to be obtained, in other cases special permission was required from the organisations' management for sharing the information.

WP2 initially tried gathering the experts on ICT systems information and awareness actions to discuss the topics approached by the questionnaire. No interest has been shown in such event, as the information discussed is considered by some organisations (vehicle manufacturers in special) confidential.

At the beginning of the study all considered comparisons were based on the assumption that the number of questionnaires answered will be enough to perform a numeric or even statistical analysis. However, the iCars Network WP2 had to deal with a serious and unexpected challenge: to approach and convince stakeholders to share their experience in communication, information, raising awareness and marketing issues concerning new transport ICT technologies. Accomplishing this task has been most of the times very difficult and many delays were encountered, as part of the information requested for the study is considered confidential by a lot of stakeholders.

Moreover, 41 organisations across Europe were interviewed under the WP2 information and awareness questionnaire-based study, and this number only allowed the consortium to perform a qualitative analysis and not a statistical one.

#### 4.4.3 Recommendations for future studies on similar issues

The WP2 consortium considers a follow-up of the questionnaire-based study in a couple of years (3 to 5 years) very valuable. The following recommendations represent food for thought for such a follow-up study.

1. The targeted participants for the interviews were relevant stakeholders addressing the ICT systems, who offered meaningful material for the WP2 analysis. However, during the study several other relevant stakeholders' categories were identified and included in the research (last five categories listed below). A list of stakeholders' categories who shall be involved from the beginning in a future study on similar issues, according to iCars Network WP2 experience is proposed below:

1. Government (or national authority agency)
2. Vehicle manufacturer
3. Automotive supplier industry
4. Users Association (clubs, unions)
5. Insurance company
6. Road operators
7. Driving Schools
8. Road and Safety Authorities
9. Research organization
10. Telecommunication industry
11. Technology providers
12. Service providers
13. Content providers
14. Private testing companies
15. Road and motorway engineering services
16. Consultant/expert organisations
17. Non-profit organisations
18. EU-funded projects whose activities targeted ITS systems and services

2. The WP2 questionnaire-based study revealed that part of the stakeholders were rather involved in the R&D of ICT systems than in the development of awareness actions related to these systems. It would thus be valuable if a clear difference in the approach of these organisations was made, which would make the analysis easier. Two questionnaires could be developed in the future: one for stakeholders who are involved in developing information and awareness actions and another one for stakeholders involved in systems development, research activities, etc.

3. To achieve a better coverage, interviewing more stakeholders from each category listed above would give a better overview of practices used by each category of stakeholders and would increase the relevance of the results. The amount of data gathered by the WP2 study permitted only a qualitative analysis, but a numerical, quantitative exercise on the same topic would be very useful.

4. As explained in the previous deliverables, many difficulties in approaching the targeted stakeholders were encountered by WP2. As the study regards information and awareness actions, in many cases the relevant responsible people for answering the questions were part

of marketing and information departments, whose daily working information is usually confidential or needs special permissions in order to be circulated to the general public.

The experience of WP2 shows that the stakeholders are not willing to share information with regards to the awareness actions they develop, or research programmes they are involved in. As a consequence, for the iCars Network WP2 Information and awareness no networking activities could be established and developed. The feedback received from most stakeholders confirms that no expectations should be envisaged by future initiatives/studies with regard to this kind of cooperation or for creating a network.

5. With regard to the responsibility for ITS systems deployment the results of the study showed that industry, EU institutions, governments and road operators were the actors considered responsible for systems' deployment.

However, it would be highly interesting to understand how the opinion about the responsibility of ITS systems deployment varies *among the different categories of stakeholders*. The amount of data gathered by the WP2 study does not permit drawing any conclusions in this direction.

6. A follow-up study in a couple of years could also extend its focus. A couple of interesting issues which could be approached in the future and enrich a potential future study on information and awareness actions are discussed in the next sub-chapter, 4.4.4.

#### **4.4.4 Other information and awareness related issues discussed by the WP2**

As explained at the beginning of the section, the WP2 meetings and discussions on information and awareness highlighted a series of valuable ideas related to the study, but which could not be integrated in the WP2 results assessment, as they did not mirror any of the WP2 initial research questions. These ideas are highlighted below:

1. Gender differences in perceiving safety and environmental issues were highlighted by the Eurobarometer on "Use of Intelligent systems in vehicles" (published in December 2006): women seem to be more sensible when it comes about safety and the environment. However, the eSafety Aware study on "Car users' acceptance of eSafety technologies"<sup>6</sup> shows that women's awareness of eSafety technologies is *considerably lower than that of men*. These results should be reflected in the advertising of the systems in the future, paying more attention to the gender differences.

2. Adapting safety policies for different regions of the same country and raising awareness about safety at the same time would have a very valuable impact at regional level. For example, if in the North of Italy there is a need for winter tyres, in the South of the country winter tyres are not needed. As a consequence, the policies and safety shall be adapted to reflect regional conditions.

3. Not the systems, but in most cases the car itself is the focus of advertising: systems do not get the right attention in the car advertising process. Thus, supporting and facilitating the development of separate actions focused on systems information, educating the public and raising awareness would be very valuable.

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<sup>6</sup> "Car users' acceptance of eSafety technologies" study commissioned by eSafety Aware, conducted by IMK Institut für angewandte Marketing-und Kommunikationsforschung GmbH, June 2009

4. Another solution to the emphasis on the whole vehicle in advertising is offered by the new star rating system of EuroNCAP. EuroNCAP just finished the Primary NCAP protocol, to include primary safety systems in their overall star rating. In the present star rating a car model being equipped with at least 80% of fitments with ESC gives a higher number of stars. There is a big opportunity of including other eSafety systems. Condition is that the systems are well known by the public. Massive awareness campaigns are needed, bigger than we have seen until now.

5. Different systems are only available on the market in packages, thus an extra effort from the end user is needed to look into these – moreover the price of just one system can be too high to raise the interest of the end user.

6. An explanation for the spectacular uptake of nomadic navigation devices in comparison with the embedded eSafety systems could be that between the two types of systems there are three main differences: a. nomadic navigation is fun to use (one can 'play' with it), b. the nomadic navigation can be used everyday (higher perceived value) and c. it is rewarding to use (clear everyday benefit).

The challenge is to translate this to for example, ACC, Lane keeping, or speed adaptation. In the development of some of these systems the 'fun' part and the immediate, every day benefit for the consumer himself, not for safety in general - have been overlooked. This could be a future recommendation for the industry, for the developing phase of these systems.

## **5. Dissemination of WP2 information and awareness results in 2010-2011**

The following dissemination actions are planned for the results of the WP2, but also generally for the results of the iCars Thematic Network project.

1. WP2 results shall be disseminated to:
  - all stakeholders involved in WP2 study
  - eSafety Forum members
  - CLEPA/TNO/ERTICO newsletters' subscribers

Moreover, the WP2 partners' websites will be updated with the study results.

2. In September 2010 a leaflet with all project's results will become available; dissemination of the iCars Network results is planned at:
  - ITS World Congress 2010 in Busan (a paper was also submitted for a session at ITS World Congress in Busan, on iCars Network WP4 Energy Efficiency - a summary of the project's results in other Work Packages will also be presented in this session);
  - CLEPA Technology Day 2010 (27 October)
  - Paris Motor Show 2010 (2-17 October)