

# INFORMATION SOCIETY TECHNOLOGIES (IST)

## PROGRAMME



### AIDE

#### IST-1-507674-IP

## AIDE Nomadic Forum activities report

Deliverable No. (use the number indicated on technical annex)		<b>D3.0.2</b>	
SubProject No.	<b>SP3</b>	SubProject Title	<b>Design and development of an adaptive integrated driver-vehicle interface</b>
Workpackage No.	<b>WP3.0</b>	Workpackage Title	<b>Sub-project 3 Technical Coordination</b>
Activity No.	<b>T3.0.2</b>	Activity Title	<b>Nomadic Device Forum</b>
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Status (D: draft, in progress, S: Submitted to EC, F: Final accepted by EC)		<b>F</b>	
File Name:		<b>AIDE D3.0.2 V5.doc</b>	
Project start date and duration		<b>01 March 2004, 48 Months</b>	

## History table

Version No.	Date (dd/mm/yy)	Details
1	16/03/2008	First draft produced by ICCS.
2	28/03/2008	Updated version by ICCS.
3	31/03/2008	Updated version by ICCS.
4	02/04/2008	This version was submitted to EC.
5	30/07/2008	This is the final version, addressing the annual reviewers' comments and suggestions.

## List of Abbreviations

<b>AIDE</b>	Adaptive Integrated Driver-vehicle Interface
<b>Bluetooth</b>	Short range wireless data transmission specification
<b>BM</b>	Business Model
<b>CAN</b>	Controller Area Network - a multicast shared, differential serial bus standard
<b>Embedded System</b>	A small computer system that is generally hidden inside equipment [machine, electrical appliance, or electronic gadget] to increase the value of the equipment for better or more efficient functionality.
<b>ESoP</b>	European Statement of Principles on Human Machine interaction
<b>EU</b>	European Union
<b>FEP</b>	Front End Processor
<b>FP7</b>	Seventh Framework Programme
<b>GPRS</b>	General Packet Radio Switch – mobile data service available to users of GSM and IS-136 mobile phones
<b>GPS</b>	Global Positioning System
<b>GST</b>	Global Systems for Telematics, Integrated Research & Development Project supported by the European Commission's Information Society Directorate General [1]
<b>HMI</b>	Human Machine Interface
<b>ICT</b>	Information and Communication Technology
<b>IR</b>	Infrared
<b>MIL</b>	Motor Indicator Lamp
<b>MOST</b>	Media Oriented Systems Transport
<b>MP3</b>	MPEG-1 Audio layer 3, digital audio encoding and lossy compression format
<b>ND</b>	Nomadic Device
<b>NDF</b>	Nomadic Device Forum
<b>NDI</b>	Nomadic Device Integration
<b>Nomadic Gateway</b>	Software component installed on the embedded device
<b>OEM</b>	Original Equipment Manufacturer, in this context car maker
<b>PC</b>	Personal Computer
<b>PDA</b>	Personal Digital Assistant
<b>PND</b>	Personal Navigation Device
<b>POI</b>	Point Of Interest
<b>R&amp;D</b>	Research and Development
<b>REQ</b>	Requirement
<b>Service Consumption</b>	Using the information provided by the service
<b>Service Model</b>	Server part of the Nomadic Device Integration link <sup>1</sup>
<b>Service View</b>	Client part of the Nomadic Device Integration link <sup>1</sup>
<b>TCU</b>	Telematics Control Unit
<b>TTS</b>	Text To Speech
<b>UC</b>	Use Case
<b>UMTS</b>	Universal Mobile Telecommunications System
<b>WG</b>	Working Group

## Definition of terms in the AIDE project

Term	Definition	Notes	Reference
<b>Action</b>	An event initiated by the driver or an application	Some examples of actions are: route guidance message from the navigation application, a warning from the ACC or an SMS from the phone. An action could also be a continuous output presented to the driver (e.g. the speedometer or output from the radio). The driver actions of interest here are those directed towards systems.	Original definition
<b>AIDE design scenario</b>	A driving situation, specified by at least one <b>action</b> and one or more <b>DVE state</b> parameters, acted upon by the <b>AIDE system</b> .	AIDE design scenarios represent a problem scenario (conflict situation). A description of possible general solution is included. The scenario and solution represent a use case for AIDE meta-functions.	Original definition
<b>AIDE meta-function</b>	The response of the AIDE system to an <b>AIDE design scenario</b> .	Examples of potential AIDE meta functions are HMI I/O management, prioritisation, scheduling and warning adaptation.	Original definition
<b>AIDE system</b>	The Adaptive Integrated Driver-vehicle Interface targeted by the AIDE IP, implementing the <b>AIDE meta-functions</b> .	The AIDE system consists of a basic set of HMI management components, in particular the ICA and the DVE monitor. Thus, the AIDE system does not include a specific set of applications or HMI I/O devices. Rather, the AIDE system should support different number of applications, I/O devices and configurations in a modular way.	
<b>Application</b>	A program (as a word processor or a spreadsheet) that performs one of the important tasks for which a computer is used	An application is a software component that fulfils a functional specification. Exchanges between application components are persistent or non-persistent information.	EAST-EAA (Webster)
<b>Architecture</b>	The fundamental organization of a system embodied in its components, their relationships to each	In EAST WP3, architectures denote system descriptions on different abstraction levels. For example, the same system has a sketchy architecture on a	EAST-EAA (IEEE Recommended Practice for Architectural

Term	Definition	Notes	Reference
	other, and to the environment, and the principles guiding its design and evolution.	high level (the Functional Analysis A.) and a detailed architecture on a lower level (The Logical A.). The term "view" could be used, but does not catch the fact that the architectures are subject to design work on the respective level of abstraction.	Description of Software-Intensive Systems; IEEE Standard P1471, IEEE Architecture Working Group (AWG))
<b>Configuration</b>	The arrangement of hardware and/or software elements in a system.		EAST-EAA (Functional safety: safety instrumented systems for the process industry section; Part 1: Framework, definitions, system, hardware and software requirements; IEC2002.)
<b>Device</b>	Functional unit of hardware or software, or both, capable of accomplishing a specified purpose.	Devices can implement a part of a function (more than one device could be necessary to fulfil a function – e.g. rear-view mirror inside and outside to provide for rear-viewing) or one device can implement more than one function (side rear-view mirror is a device that can include temperature captor, direction signalisation ...).	EAST-EAA (Functional safety: safety instrumented systems for the process industry section; Part 1: Framework, definitions, system, hardware and software requirements; IEC2002).
<b>Driving task</b>	All aspects involved in mastering a vehicle to obtain a certain goal (e.g. reach a destination). This corresponds to the primary task in a driving situation.	The driving task can be described on different levels of abstraction. Michon proposed a widely adopted scheme where the driving task is considered on strategic, tactical and operational levels. The strategic level concerns behaviours directed towards more high-level goals, e.g. reaching a destination in time. The tactical level concerns	Original definition.

Term	Definition	Notes	Reference
		behaviour on a shorter time frame, e.g. selecting headway and deciding when to change lane. Finally, the operational level concerns the moment to moment control of the vehicle. (Michon, J.A. (1985). A critical review of driver behaviour models: What do we know? What should we do? In L.A Evans and R.C. Schwing (Eds.) Human Behaviour AND Traffic Safety. (pp. 487-525). New York: Plenum Press).	
<b>DVE (driver-vehicle-environment) state</b>	A set of dynamic parameters representing certain aspects of the driver, the vehicle and the environment.	DVE state and DVE condition is used interchangeably in this deliverable.	Original definition.
<b>Function</b>	A task, action, or activity that must be accomplished to achieve a desired outcome (EAST-EAA).	Examples of Functions are: turn by turn navigation, voice call, incoming warning from an ADAS.	EAST-EAA (IEEE Guide for Developing System Requirements Specifications; IEEE Standard P1233a, 1998).
<b>Human Machine Interface (HMI)</b>	All the input and output devices which permit the interaction between the user and one or more vehicle systems.	The EAST definition considers only interaction with IVIS. The current definition comprises any device that mediates interaction with a vehicle system.	EAST-EAA (slightly modified)
<b>Mental workload</b>	The specification of the amount of information processing capacity that is used for task performance.	The effect that driving demand has on the operator in terms of stages that are used in information processing and their energetic (c.f. <b>driving demand</b> ).	de Waard, D. (1996). The Measurement of Drivers' Mental Workload. ISBN 90-6807-308-7. Traffic Research Centre. University of Groningen.
<b>System</b>	A collection of components organized to accomplish a specific	Set of elements, which interact according to a design; an element of a system can be	EAST-EAA (IEEE Recommende

Term	Definition	Notes	Reference
	function or set of functions.	another system, called a subsystem, which may be controlling system or a controlled system and may include hardware, software and human interaction.	d Practice for Architectural Description of Software-Intensive Systems; IEEE Standard P1471, IEEE Architecture Working Group (AWG, 2000).
<b>Use case</b>	An intended or desired flow of events or tasks that occur within the vehicle and are directed to or coming from the driver in order to accomplish a certain system-driver interaction.	Standard use case templates are mainly intended for individual IVIS/ADAS functions and include solutions. The "use cases" for AIDE meta-functions are called AIDE design scenarios.	Original definition (based on existing definitions).

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## Executive Summary

This report summarises the work and progress of the Nomadic Device Forum (NDF) during its third year of operation, following the activities described in AIDE Deliverable 3.0.1 of April 2007. The principal activity of this period has been the realisation of the AIDE Nomadic Devices meeting on the 24<sup>th</sup> of October 2007, which was organised at ACEA premises in Brussels, Belgium.

The specific workshop of the AIDE Nomadic Devices Forum was the sixth one organized within the framework of AIDE project. The European Commission (EC) that chaired the workshop, ACEA (chair of the NDF), ERTICO and ICCS (co-managers of the NDF) organised the workshop.

The 2007 AIDE Nomadic Devices Forum Workshop aimed to bring together the key stakeholders in the area of the Nomadic Devices, in order to discuss and define a roadmap for achieving two important goals:

1. The wide approval and implementation of ESoP by all stakeholders in the area of Nomadic devices usage within the vehicle including OEMs and ND manufacturers.
2. The design and acceptance of a common (even standardised) gateway for Nomadic Devices (NDs) within the automotive vehicles.

During the workshop plenary presentations from representatives of all key stakeholders were performed while specific issues were analyzed in parallel sessions (ESoP, Business models, Common Gateway). The workshop closed with an open discussion on issues related to the main goals of the workshop including also proposals for the continuation of the Nomadic Devices Forum after the end of AIDE project (early 2008).

Invitations for the workshop were sent to a selected group of key stakeholders. Around 30 of them, high-level representatives of OEMs, ND manufacturers, Service providers, Tier 1 suppliers and Research Institutes participated to the workshop. The full details of the event are uploaded in the AIDE web site “[www.aide-eu.org](http://www.aide-eu.org)” and the e-safety web site where the final minutes and the presentations of the workshop can also be found.

At early 2008 the Nomadic Device Forum became part of the eSafety initiative of the European Commission (status as fully accepted eSafety Working Group yet to be confirmed at the time of writing) and is now equally chaired by ACEA (Wolfgang Reinhardt) and MEDION (Mark Jendrzok). It was also agreed to continue with the same Steering committee as before, in order to ensure continuity. This Steering Committee includes except of the two chairs EC, VTEc and ERTICO and ICCS (the latter two responsible for the daily operation of the Forum and the organisation of events). The group has drafted its Terms of Reference while an MoU on safe integration of infotainment systems is under preparation as well. These topics will be discussed during the next Nomadic Devices Forum meeting, which is organised on the 10th of April 2008, at ACEA offices, Brussels, Belgium.

## 1. Introduction

Nomadic devices, or portable devices used or intended to be used by the driver for support, assistance, communication or entertainment, are in increasingly common use. The most common by far are mobile phones used with some kind of hands-free kit. The market for PDA-based navigation systems is growing rapidly as prices fall and systems are sold in discount supermarkets or bundled with a new vehicle. Music players, such as MP3 players are also becoming more common in vehicles.

Increasingly, all of these types of devices are being offered as series- or after-market-fit options by car manufacturers. This growth is in response to customer demand, but it does create important issues for driver safety, for the human-machine interface (HMI) and for the integration of the devices into the vehicle. Specific points of concern include:

- The risk of additional driver distraction from using an unsuitable or poorly located nomadic device;
- The need for clear and agreed guidelines on the safe design, positioning, fixing and use of nomadic devices and their applications;
- The lack of agreed standards for the “docking” and integration of nomadic devices in the vehicle.

AIDE explores a number of issues related to Nomadic devices use by drivers including:

- Safety issues raised by the introduction of the Nomadic Devices in the vehicle.
- Integration of Nomadic Devices and definition of a gateway concept.
- Requirements both from OEMs but also from device manufacturers point of view.

For this scope the AIDE Nomadic devices Forum was created in June 2005. This Forum brings together key stakeholders to discuss these issues, identify problems and needs and finally come to a consensus around this very complex and sensitive area. To address these issues, the Nomadic Device Forum has organised two Working Groups. The first Working Group (WGA) is dealing with the definition of a smart Device-Car Gateway, while the other (WGC) is exploring the Commercial issues and business cases for vehicle-device integration (a Working Group B, on HMI and safety issues, was formed when the Forum was set up, but after some meetings its members agreed there were not sufficient issues to address in order to maintain a separate WG).

Currently more than 100 members have participated in the Forum including vehicle manufacturers, automotive suppliers, portable navigation system manufacturers, pocket PC/PDA manufacturers, application developers, navigation map suppliers, mobile telecom operators, service providers, government authorities, the European Commission, driver safety & HMI experts and research organisations & academic bodies. In addition to this a close cooperation has been established with other relevant European Research and development Projects such as GST (Global System for Telematics), an Integrated R&D Project supported by the European Commission's Information Society Directorate General.

This report compiles the main results of the work during the fourth year of the European Nomadic Devices Forum life. As the main activity in the last year was the Workshop at 24/10/2007 the report is given in the form of minutes of the last workshop. Through these minutes all the main items discussed during the last year, decisions taken and next steps are presented. Thus in the next chapter a summary of the objectives and achievements of the 1st year are given while chapter 3 includes the minutes of the plenary meeting at 24/10/2007.

## 2. Activities and achievements

The Nomadic Device Forum objectives for 2007 were to continue to provide a platform for all stakeholders with an interest in nomadic devices and their safe use and integration in vehicles. The intention was to hold at least one plenary meeting, a sort of “mini-conference” on nomadic device issues, and to support the various Working Groups to continue their work to define the technical approach (WGA) and business issues (WGC) for a harmonised portable device-vehicle gateway solutions.

During 2007 the main topics of discussion were:

- The need to promote ESoP 2 as the main platform providing the key recommendation needed for the safe integration of Nomadic Devices within vehicle interior. Although OEMs and Tier1 suppliers seems to be discussing ESoP in a mature way the same was not true for the Nomadic Devices manufacturers. So the main effort here was to open the discussion between all key stakeholders and assess the possibility of an MoU on this topic.
- The need for an agreement on the specifications of a common (even standardised) gateway for Nomadic devices within vehicles. The discussion here focused mainly on the requirements and the obstacles towards such a goal.
- The identification of market opportunities and of win-win scenarios for all key stakeholders in order to promote the previous two issues.

During this year also the Forum tried to promote the NDF and the above issues at the ND manufacturers community to address the main weakness identified in the previous years.

The highlight of the year was the organisation of the AIDE Nomadic Devices meeting on the 24<sup>th</sup> of October 2007, which was organised at ACEA premises in Brussels, Belgium. There the unanimous decision of the Nomadic Device Forum was to continue the Nomadic Device Forum activities even beyond the duration of the AIDE project.

The next chapter details the results of the discussions held during the meeting, along with the decisions taken. In addition, it provides information on the way that the Nomadic device Forum will continue its activities after the completion of the AIDE Integrated Project.

## 3. Minutes of the Nomadic Forum Workshop, 2007/10/24

### 3.1. Welcome Address

Wolfgang Reinhardt (ACEA) and André Vits (EC) welcomed the participants.

All participants were provided with the agenda of the workshop, and the participants list. All approved the agenda and then Andre Vits presented the objectives of the workshop. He commented on the importance of the ESoP, which after its revision gains more and more recognition and interest from the stakeholders. HMI issues remain a top issue for EC and both the Slovenian and Germany presidencies are quite keen to this topic. So it is up to the actors to take the initiative and continue this effort. As the Nomadic devices market becomes more and more mature the importance of the ND Forum becomes clearer and is obvious that the key stakeholders should come together and discuss how to establish a closer cooperation.

### 3.2. ESoP: Status & Outlook

Valérie Moutal from the European Commission presented the ESoP II focusing on the Nomadic devices topics .

The first step was the production of the first ESoP, consisting of generic guidelines and principles for the safe and efficient use of in-vehicle HMI.

The second step was the production of the second version after the decision to give more effort for the Nomadic Devices issues. An overview of the eSafety Working Groups results was provided (the presentation is uploaded in the AIDE website: [www.aide-eu.org](http://www.aide-eu.org)):

1. Producers should:
  - a. Apply good design principles;
  - b. Supply secure fitting kit;
  - c. Provide clear instructions for product use;
  - d. Disable functions not intended to be used inside the vehicle.
2. Vehicle manufacturers and Service providers should cooperate to develop smart interfaces. In order to achieve this, collaboration is required between producers; vehicle manufactures and service providers as well.
3. Member states should take measures towards this topic, disseminate the ESoP and push towards its general adoption.

The first document issued on 2005 was composed by design principles and Recommendations for Safe Use (RSU). Its scope was to address information and communication systems whether they are installed or not. Valerie Moutal explained that recommendations are to be applied on a

voluntarily basis, and consist of high level principles with balanced risk and benefit approach, whereas they are not constraint guidelines. It was noted that the AIDE integrated project gave input to this work, and suggested that if the constraints were high, then it would not be applicable.

The second document was issued on November 22<sup>nd</sup> 2006. Regarding the legal basis, Mrs Moutal explained that it is not a binding document for the EU member states, however, the member states should respond to it and (if this is the case) state the reasons for which they don't want to apply it.

New stakeholders that have been involved with the principles are:

- Points of sales, employers;
- Vehicle hire companies;
- Service operators;
- Users.

These groups are to be contacted in order to receive their view as well, while the involvement of all 27 member states will be seek, which is challenging, due to the large number of the EU member states.

Following this, the member states should take actions in order to promote the ESoP.

Mrs. Moutal asked the Nomadic Device and vehicle manufacturers to sign a self-commitment agreement to apply the ESoP recommendations. She underlined that the European Commission will assist them to establish this dialogue; while she noted that the specific constraint of ESoP is that it was originally designed for functions aimed to be used while driving.

Concluding, Mrs Moutal asked from all participants to visit the new website of the European Commission: "[www.ec.europa.eu/intelligentcar](http://www.ec.europa.eu/intelligentcar)".

Mr. Wolfgang Reinhardt from ACEA commented that some of the member states are thinking of forbidding in-vehicle use of Nomadic Devices. For example, Spain is considering forbidding the in-vehicle use of navigators, although they are considered as quite helpful systems. For this reason the Nomadic Devices stakeholders should proceed to the acceptance of the updated ESoP for the HMI, in order to present the way in which safe and efficient in-vehicle use of Nomadic Devices can take place making the need for legislation obsolete.

### ***3.3. Perspective of Automobile Manufacturers***

Lutz Eckstein from BMW GROUP presented the perspective of the automobile manufacturers, focusing on the way of making the ESoP become more effective (the presentation is uploaded in the AIDE website: [www.aide-eu.org](http://www.aide-eu.org)).

Naturalistic driving studies show that drivers engage in a large scale of activities. Moreover, drivers' distraction is a societal problem and not a problem produced by a specific industry (such as the Nomadic Devices industry).

Rapid increase of the number and functionality of the systems results to an increment of fixed installed systems by the original equipment manufacturers. Functionality becomes more independent of system type. However, it is the same driver at all times so it isn't logical to apply different rules; the rules should take into account what are the capabilities and limits of the human being. Thus all system types that offer functionality to the driver need to be designed using the same basic rules / standards / guidelines (reference architecture but no common systems, touch and feel is always an individual design element of the respective manufacturer)

Public-private working groups produced the ESoP and it is a set of HMI design guidelines that addresses clearly distinguished HMI aspects. It consists of:

- Five principles on the goal of system design;
- Five principles on installation / location of displays and controls;
- Five principles on information complexity, timing and accuracy, the use of standards and on sound levels;
- Eight principles on manual interaction, interruptability and control of interaction time, system feedback;
- Four principles on availability of visual information and functionality, system status, function and malfunction;
- Seven principles on instructions covering installation, use and maintenance of the system, the form and content of product information.

When preparing the ESoP, the Working Group tried to structure the system into three dimensions:

- a. HMI aspect;
- b. System type;
- c. Stakeholder.

Mr Eckstein underlined that a good HMI is achieved by applying the ESoP, but also the user of the system needs to be addressed. Systems that not fulfil principles from ESoP are for example the navigator, the PDA and systems to be used by the driver while driving. Systems not used in a responsible way are for example delivery service systems, while the same applies for the installation and use of nomadic devices by the driver. Examples of problems are the fixation to windscreen (which obstructs the forward field of view), the small fonts, the low contrast, the glare and reflection of screens, and so on. In order to diminish such kinds of problems, first of all, the involved stakeholders should achieve safe installation. The work includes the providence of a safe installation kit by the manufacturer of nomadic device / system, while the user (driver) should make sure that installation is done according to the instructions and enforcement will be applied by the road authorities whenever violations are observed.

ESoP provides design guidelines; in order to ensure safe and efficient in-vehicle use of nomadic devices, the aforementioned design guidelines should be complemented by system use guidelines.

Mr. Eckstein presented CE4A (Consumer Electronics for Applications) forum, which is involved with the in-vehicle integration of nomadic devices. The objective of the forum is to enhance the technical integration of CE-devices into vehicles in terms of quality, time-to-market and costs. More specifically, CE4A aims to:

- Actively support the standardisation of communication protocols for Consumer Electronics Devices;
- Enhance existing standards (no proprietary protocols) of the Consumer Electronics industry for in-vehicle use;
- Concentrate on a small number of relevant protocols in order to limit complexity;
- Participate in standardisation bodies;
- Cooperate with Consumer Electronics companies;
- Set up a standardised reference platform in order to harmonise the implementation on the OEM as well as on the Consumer Electronics industry side.

The organisation of CE4A was presented; Verband der Automobilindustrie (VDA) chairs CE4A and the steering committee consists of CHA, AUDI, DC, BMW and VW. CE4A started as a German activity in order to avoid complexity, however, the group is open to everybody, so all that are interested are welcome.

Mr. Eckstein concluded to the following elements:

- High consumer demand for nomadic device use in vehicles. Installation, information presentation, interaction and system behaviour must be compatible with driving task (ESoP).
- ESoP led to good HMI-design for OEM systems –ACEA’s general agreement in 2001 was efficient and effective. ESoP1999 is integrated in vehicle development process
- Majority of aftermarket and nomadic systems are not designed and integrated in accordance with the ESoP. All product-responsible parties need to commit to the ESoP2006.
- Automotive Industry actively supports the standardization of the communication protocol for an easy integration of CE-Devices. CE4A is open for additional members. It does not address HMI but focuses on the aspect of technical integration.

Mr. André Vits commented that there are examples where the work is taking up on national level, while information between the European Union and the United States of America has been exchanged.

### **3.4. Perspective of Nomadic Devices Manufacturers**

Mark Jendrzok from MEDION AG presented the perspective of the Nomadic Devices manufacturers, focusing on the mobile navigation business.(the presentation is uploaded in the AIDE website: [www.aide-eu.org](http://www.aide-eu.org)).

MEDION as a typical nomadic devices manufacturer already has experience in the navigation business. MEDION as “first marketer” has the liabilities to test its electronic devices against European CE norms for IT equipment. Based on sales & service experience, the devices undergo continuous improvements in regard of usage model, product shape and definition, mounting solution etc.

However, there has been a lack of knowledge regarding the “Recommendations on Human Machine Interface” (ESoP 1999/2006).

Next to MEDION, there are in the meantime more than 120(!) other Nomadic Devices brands only for Navigation-related products in the market – a majority of them will be in the same position, many of them may have less experience.

Mr. Jendrzok underlined that currently nomadic device manufacturers spend effort to adopt the ESoP on HMI. More specifically, after an investigation on if products are in line to the ESoP on HMI, the following were reported:

- Design goals: minimization of distraction and avoidance of hazardous behaviour are adopted to a large extent (within its limitations)
- Installation principles: security fitting is partially adopted, while no obstruction, positioning within normal line of sight and elimination of distraction, through glare or reflections, are adopted to a large extent (within its limitations)
- Information presentation principles: quick and easy information providence is adopted, while accurate prioritised and non-distracting information flow is partially adopted;
- Interaction with displays and controls principles: uninterruptible and short interaction is not adopted, while avoidance of unnecessary distraction is partially adopted;
- System behaviour principles: limited access to unnecessary applications and interaction between systems concerning warnings are not adopted;
- Information about the system principles: correct and simple manual in printed format is adopted, while security instructions included is partially adopted.

Mr. Jendrzok stressed the fact that a better mounting solution should also be established. Current solutions are generic that can fit to all vehicles, while they are easy to integrate by the vehicle’s driver and can be mounted in a horizontal and vertical (less) 30<sup>0</sup> angle degree. However, they are still obstructing the driver’s normal view of the road scene and can be randomly mounted (maybe not with fingertip reach or too close to the airbags). Adding to the above, one can note that there are several solutions available in the market today, with huge quality differences. Moreover, some of the companies provide individual mounting solutions, which could potentially still obstruct controls or displays. Thus the need of certain specifications of the section cup holders has to be defined and alternatively, car-mounting solutions need to be offered.

The perspective of the nomadic devices suppliers, in order to adopt / follow the ESoP on HMI, was provided through certain examples.

Regarding the optimization of integration concepts, it was noted that more care would be taken so as to avoid obstructing controls or displays. Following the recommendations for display positioning, the central position top of the dashboard is considered as the best position to place a nomadic device, while any operation elements should be placed on the steering wheel. Lacking of standards means that the OEMs are providing fixed installations without any guideline. Another important element is that the driver should keep hands on the steering wheel. A solution is to provide remote control or operation controls attached to the steering wheel, in reach of the user. This could be considered as a safe solution for operating a nomadic device (such as a navigator) or even the multimedia applications and the telephone call. This would reduce the interaction with the nomadic device while driving.

Easy operation through quick buttons should be guaranteed via new software design (software wise). The nomadic devices should encompass:

- Programmable quick buttons for individual workflow improvement;
- Easy navigation menu structure keeping sequences of interfaces as short as possible;
- Menu items designed and positioned for easy identification of the right menu;
- Reduction to case-specific functionality.

Mr. Jendrzok noted that there is no legislation for nomadic device manufacturers; therefore they move the way they think is the best for their companies. For that reason nomadic device manufacturers are delighted to see that there are recommendations. Concluding he noted that the majority of the nomadic device manufacturers could easily address most of the recommendations, however some of them could involve additional work. The latter may not be quickly adopted due to lack of knowledge and lack of pressure (from a legal point of view).

Proposed measures especially for the principles not reinforced by national legislation are:

- Creation of additional pressure on all stakeholders;
- Increase of awareness of vehicle drivers.

The continuous amendment of the ESoP was proposed and the interest of the nomadic device suppliers to join this work was expressed.

Mr. Lutz Eckstein – BMW GROUP (Q): How widely would the rest of the companies such as Tom Tom, Nokia, etc. adopt the position presented?

Mr. Mark Jendrzok – MEDION AG (A): There is not such good communication among the nomadic device manufacturers. The aim is to have an open table discussion among the top manufacturers and after that smaller companies will follow.

Mr. Jochen Katzer from NAVIGON AG commented that the user may not be ready to pay more for an individual mounting and that the best solution for NAVIGON would be the providence of a standardised mounting place in the vehicle, by the vehicle manufacturers.

### **3.5. Perspective of Suppliers**

Lars Reger, from SIEMENS VDO, presented the perspective of the suppliers, focusing on the requirements of the driver's workplace and the overall vehicle architecture (the presentation is uploaded in the AIDE website: [www.aide-eu.org](http://www.aide-eu.org)).

The "always on" and the "managed complexity" are considered as typical applications of the future vehicles.

"Always on", examples are the car-to-car communication and the integrated nomadic devices. Regarding the latter one could say that the driver's workplace is complex and that the need for an integrated solution remains as a first priority. Access content should be shown to the driver in a safe way, avoiding abuse.

A study performed by SIEMENS VDO showed that the core needs of the drivers are:

- Safety for driver and passengers;
- Simplicity and easy to use;
- Robustness and reliability.

Other desired functions include:

- Organisation of the driver's life;
- Guidance;
- Entertainment.

Seamless mobile integration can provide a list of functions to the driver such as:

- Telephony (operated with hands free), including calls management and contact list providence. This function can be quite easily integrated in the car system via e.g. Bluetooth.
- Music / video management, including audio streaming, play list control and connection of any device such as the iPod, an mp3 or a USB stick. These functions can be easily integrated in the car system as well. Today there are already available radio / CD players that provide a USB drive.
- Navigation providence can be achieved via a portable navigation device or a mobile device. There is no standardization about navigation and one can think of various different integration options, thus the integration of navigation is a challenging task.
- Telematics can provide various functions such as traffic, park, and hotel booking information, yellow pages, web radio and so on. These functionalities can be quite easily integrated in the vehicle.

A list of drive safe HMI solutions for portable devices was presented including:

Ergonomic HMI for in-car usage

- Clear navigation guidance, audio and visual within the head unit or/and within the instrument cluster;
- Access from steering wheel controls;
- Access from speech;
- Etc.

Drive menu concept HMI

- Direct access to top level functions;
- Easy juggling between services.

HMI customisation tools

- OEM brand and image, rapidly.

Mr. Lars Reger underlined that in order to achieve drive safe HMI solutions; the nomadic device or the vehicle manufacturers should give away their look & feel.

Zero emission and zero accidents with embedded networked systems could be achieved with the combination of predictive and reactive active safety systems. However a framework is needed, to perceive, analyse and act with optimized data flow.

### **3.6. Perspective of Service providers**

Michel Fond from ORANGE presented the perspective of the service providers, focusing on the need for a nomadic devices gateway for in-vehicle integration of nomadic devices (the presentation is uploaded in the AIDE website: [www.aide-eu.org](http://www.aide-eu.org)).

The nomadic devices gateway is considered as a chance for mass-market deployment of ITS services and safe use of nomadic devices inside vehicles.

During the meeting of the eSafety Forum at Versailles, on the 18<sup>th</sup> of September 2007, the European Commission communicated the need for progress towards smarter vehicles in Europe. In order to improve the Human-Machine Interaction, the European Commission adopted an update of the ESoP and faced with the proliferation of ND in vehicles, two challenges:

- Safe use and safe fixing in the in-vehicle environment;
- Interface with the in-vehicle systems.

The AIDE Nomadic Devices forum has recognized cooperation as the key to success for seamless services to nomadic devices users. An important challenge however, is the way to avoid the “wild

use” of nomadic devices inside the vehicle environment. The proposed actions that can address this challenge include the following:

- Listen to customers needs and expectations;
- Cooperation between stakeholders towards easy-to use, plug & play and compliant solutions.

Smart phones can be used in and outside the vehicle environment; they can have open access to service providers. On the other hand, functionalities and performance improve very quickly and customers want to benefit from them also inside the vehicle. They don't care about safe installation and use because they are not aware of HMI and driver's distraction issues.

Cooperation between stakeholders towards safe integration of nomadic devices in the vehicle environment is a challenging task. The way that the stakeholders would be encouraged to collaborate on the definition of solutions for safe integration was investigated. Positive actions that are requested from stakeholders include:

- Safe fixing (several attempts are already experimented and launched).
- Safe use. Banning the use of the nomadic device inside the vehicle is not a solution; information, training, and campaign could raise public awareness on safe use issues. The availability of plug & play and easy-to-use solutions assists in achieving this goal.
- Life cycle conflict. This is considered as a blocking point between nomadic device manufacturers and vehicle manufacturers. The way to overcome this barrier should be investigated and the involved stakeholders should take advantage of this activity as an opportunity to express their interests. ORANGE has been involved to the eSafety, and the AIDE Nomadic Devices Forum and actively supports its activities.

End users will take advantage of the positive actions. The success for stakeholders will be when the market takes off.

Michel Fond presented the relevant GST results, i.e. the way that the GST Integrated Project achieved the integration of nomadic devices and the concept car developed by ORANGE, which demonstrates in-vehicle ITS services running on nomadic devices. He underlined that the proposed solution doesn't involve connection of the nomadic device to the CAN bus. The gateway can be implemented by a very small piece of software in the nomadic device (e.g. the mobile phone). Such a gateway can provide a list of benefits, including:

- Security (authentication, authorization, identification and control of the exchanged information);
- Possibility of provisioning ITS services;
- Stable interface minimizing the life cycle “conflict”;
- Opening the door to new services co-certified by stakeholders for the advantage of end users;

It is foreseen that the way to move forward would involve:

- Cooperation between the stakeholders;
- Smart communication between in vehicle systems and telecom devices;
- Valuable and expected seamless services;
- Easy to use and according to regulation solutions;
- Sustainable business models.

Mr. André Vits encouraged all participants to take use of the research initiatives results.

### **3.7. Perspective of Users**

Johann Grill from ADAC presented the perspective of the users, focusing on the need for measures that should always be available to users; the consumers should always test the provided systems before purchasing them (the presentation is uploaded in the AIDE website: [www.aide-eu.org](http://www.aide-eu.org)).

The first step is the identification of the users needs. This exercise involves the identification of the responsible parties for the non-safety consequences. Mr. Grill presented an interesting video on the latter. The motorists needs include:

- No curtailing of their freedom of decision;
- No additional legal risks;
- High reliability;
- Easy and intuitive operation;
- Assisting the driver by filtering important warnings or recommendations;
- Availability of spare parts for the electronic systems;
- Transparent, clear and concise user instructions;
- Introduction without further interdictions or coercive measures.

The major problems emerging from the driver assistance systems can be summarised to two points: the acceptance problems and the fixation.

Acceptance problems include:

- Distraction;
- Operation/handling;
- Curtailing freedom of decision;

- Compensation;
- Monotony and under-challenging;
- Reliability, sturdiness;
- Control and its legal implications;
- Privacy.

Being critical to nomadic devices doesn't mean that one cannot recognize their high advantages:

- Functionality;
- Price;
- Flexible usage;
- Rapid technical adjustments;

However the safety improvements are necessary.

A comprehensive field test of mobile navigation devices has been performed at the ADAC Technik Zentrum Landsberg a. Lech. The evaluation criteria included operation aspects (regarding instructions, mounting and device operation), navigation functionality (i.e. voice output, graphical display, routing and reaction to leaving route), route calculation (i.e. route calculation time and repositioning delay) and data availability.

Most of the testing can be performed in a testing lab equipped with a GPS mouse. The results are integrated into a table identifying the individual and overall results of each mobile navigation device. The table is quite comprehensive, offering the consumers an overview and potential assistance for their purchase decisions.

The requirements for the installation of a nomadic device today include a power cord and TCM. The open wiring is an encumbrance as well as a safety risk.

From a safety point of view, the mounting of a navigation device was subjected to a crash test. The first test that was presented to the participants of the workshop shows that while most mountings are stably anchored, the devices themselves may become projectiles. The second test looked into the safety risk posed by a navigation device when an airbag deploys. The device becomes a projectile inside the cabin.

Examples of sound installation of nomadic devices and examples of various display types for car navigation systems were presented as depicted in the relevant presentation (the presentation is uploaded in the AIDE website: [www.aide-eu.org](http://www.aide-eu.org)). Displays with insufficient anti-reflective treatment render destination entry and the operation of the device difficult; sun glare makes turn instructions almost unrecognisable. Moving images (TV, Video, DVD) must remain off limits for the driver; however, technically immature systems – even those for rear-seat users – often require the intervention of the driver.

The demands from the various users of nomadic devices are detailed in the following section.

Car Manufacturers should:

- Develop standard interfaces for the installation of retro-fit devices;
- Develop standard requirements for the in-vehicle use of mobile retro-fit devices;
- Define test procedure for mountings (“certificate”).

Retro-Fitters should:

- Follow EU recommendations for the in-vehicle use of driver assistance systems (catalogue of criteria);
- Co-operate actively with car manufacturers.

Political Decision-Makers should:

- Define and monitor the implementation of practice-oriented, realistic and not overly costly requirements for the in-vehicle installation and operation of driver assistance systems;
- Promote dialogue between retro-fitters and car manufacturers.

Mr. Grill finally explained the role of ADAC in the introduction of new driver assistance systems. He explained that ADAC is a critical and positive observer of developments in driver assistance systems that questions, tests and evaluates. ADAC represents consumer interests vis-à-vis manufacturers and the legislator.

An interesting video regarding the mounting of the nomadic devices via a crash test performed, that showed the dangerous effects that the current standard window mounting of nomadic devices can have to the passenger of the vehicle’s back seats was presented.

### **3.8. Breakout sessions**

Three parallel sessions were organised, regarding three aspects of the in-vehicle use of nomadic devices: (a) HMI and safety, (b) Business models, and (c) Towards a nomadic devices gateway.

#### **3.8.1. HMI & safety**

The session was moderated by Valerie Moutal from EC. She presented a draft agenda and proposed the main issues/questions around which the discussion was organised:

##### 1/ ESoP

- Do you consider the ESoP as a valuable tool for your company?
- Do you know it? Do you apply it? Is it compatible with your own existing design guidelines?
- Do you think it is fair that it addresses automotive industry and ND industry equally?

- What is the added value of the principles for you? (fair competition, avoidance of more constraining legislation, improved safety, better briefing of your subcontractors..)
- Is something essential missing in the text?

#### 2/Specific ND constraints vs safety

- Fixing
- Use while driving (driver distraction, learning phase, manipulation, responsibility of the supplier...)
- Interaction with other embedded devices (radio, seat belt reminder...)

3/Potential improvements of the ESoP and specific implementation of the guidelines by ND supplier

Session participants introduced themselves and presented the needs and interests of their company. Then a discussion on the above items followed.

### **3.8.2. Business models**

The session was moderated by Paul Kompfner from ERTICO - ITS Europe. He presented a draft agenda and proposed the objectives of the session:

- Identify key stakeholders for “safe nomadic device integration” issues;
- Towards a common gateway, or is there another solution?
- Customers’ wishes and requirements;
- Threats/opportunities for vehicle industry, portable device industry;
- Business barriers to a solution, how to overcome;
- What need for a “nomadic device forum”?
- Roadmap and next steps.

Session participants introduced themselves and presented the needs and interests of their company. Key points from the discussion included:

Thomas Nickle from Harman-Becker foresees basically three stages of deployment:

- Smart phone and smart devices: OEMs will provide limited connectivity to nomadic devices (iPhone, TomTom, etc.) on a bilateral basis with ND manufacturer.
- Embedded devices: Integration of nomadic devices that can use intelligence and I/O devices of cars
- Fully integrated devices: Low cost on-board units.

Wolfgang Reinhardt from ACEA foresees a risk of legislation for NDs similar to hands-free enforcement for mobile phones, if the development of NDs continues as it is. The rapid introduction of nomadic devices is seen as a lost business for the OEMs' point of view. There is a window of opportunity for OEMs and ND manufacturers to cooperate in specific fields. The introduction of e-call in 2011 may lead to a need for a connection between the car and mobile phone. Possibly some non-safety critical ADAS could make use of ND connectivity and functionalities. In the medium term NDs could also support traffic shaping or tolling applications.

Mark Jendrzok from PND and consumer device maker MEDION stated that there are some 120 PND manufacturers with strong competition from China. MEDION is looking for a better cooperation with OEMs. MEDION could do some adaptation to fit into the vehicle environment, although today users seem to be not ready to pay for better car integration.

Arne Tyb'1 from iPublish presented a Nomadic Device prototype for an innovative PND and travel guide, developed according to the specifications of an automotive OEM. The outcome was a very well designed device that fulfilled the OEM requirements, but finally the OEM found it too expensive and not competitive with low-cost PNDs. Mr Tyb'1 recommends that OEM requirements need to be adjusted (relaxed) for Nomadic Devices.

François Poncet of PND manufacturer Magellan also participated.

### **3.8.3. Towards a Nomadic Devices Gateway**

Angelos Amditis from the Institute of Communications and Computer Systems (ICCS) moderated the session. He set the agenda of the discussion and explained that the objective would be on one hand the cooperation between the vehicle and the nomadic device manufacturers towards nomadic devices gateway and on the other hand (if standardisation is needed) the identification of the obstacles, the next steps and the nature of the needed gateway (software or hardware solution).

Each participant of the session (ANNEX D) then introduced himself and presented the different needs and interests of each company.

Jochen Katzer underlined that NAVIGON identifies the nomadic device holder place as the main issue. The most important issues should be solved in the first place. A standard connector is also important, but it would be better to try to comply with market products.

Martin Fesefeldt from VW identifies the standard nomadic devices interface and power supply as the main issue. However, if this is provided, more functionality than the one available today should be provided. The functionality should be standard and easy to use. CE4A has the objective of opening the discussion about these issues in a smaller group and then open the results to all.

Kenneth Larson from SCANIA, as a representative from the trucks industry explained that the option of a standardized gateway is considered to be more than interesting. He noted that we should not expect fast solutions in the area by the end users; instead the nomadic device and the vehicle manufacturers should take action, taking into account the costs needed to achieve this (in order to be applicable, it should be a cost efficient solution).

Angelos Amditis commented that although the car industry has ACEA and EUCAR associations, we lack an association of nomadic device companies. On the other hand there are three known solutions today for the integration of nomadic devices, provided by AIDE IP, GST IP and CE4A. The nomadic device producers can make use of the AIDE Nomadic Devices forum as an umbrella for discussions.

Andreas Englesberg from BOSCH underlined that we should aim for different levels of integration and stressed out the need for an information manager, for coordination of the interaction both for on-board systems and nomadic devices. The work should take into account protocol and data exchange issues.

Lars Beger from SIEMENS emphasized the fact that the automotive industry should not define on their own the standards and that the lack of the mobile industry is a problem for the nomadic devices forum. The mobile industry has its connectivity and protocol plans and the automotive industry is not part of the first priorities. An option could be to follow them.

A solution to the aforementioned issue would be to identify the existing systems and try to adopt for automotive use. This is what CE4A does. Many OEMs are thinking of allowing external devices to do the work of expensive in-built components (e.g. DVDs).

Rolf Brandes explained that DELPHI DELCO is highly interested in the integration of nomadic devices. However the segmentation should not only exist on the level of integration, but also to the different kinds of devices that will be integrated.

Ralf Becker from PANASONIC clarified that the consumer electronics industry doesn't see a huge market in the automotive industry (why that?). A market of course exists, however they want to do it in their own terms. Some vertical applications are there, however they are very specific. Mobile phone integration can be achieved via Bluetooth, while charging and data exchange can be achieved via a USB connector.

Jochen Katzer from NAVIGON claimed that it is not possible to have the same solution both for telephony function and for navigation. If we aim to integrate everything, we should segment the integration needs of the various functions.

Following this round an open discussion was done around the following questions set by the Moderator:

- What is a Nomadic Device? How do we define it?
- Do we really aim to a common gateway solution? What are the benefits for the OEMs? What are the benefits for the suppliers? What are the benefits for the users/drivers/travellers?

- Towards a common or standardized Gateway: Could this be the vision of this Forum? Which are the key technical challenges to achieve this? Are there any technical barriers to overcome?
- The ND interface and Gateway specification should define the minimum requirements for a device (details to be specified by the services use cases). Do we want minimum requirements? Which minimum?
- Do we want - need a certification process?
- Major (non technical) obstacles towards a standardised gateway?

### **3.9. Results of the breakout sessions**

#### **3.9.1. HMI & safety - results of the session**

Valerie Moutal from the European Commission presented the results of the session. Summarizing the following points were identified by the session's participants (ANNEX B). The key issues discussed was the need for using ESoP as the basis for the cooperation between the two Industry sectors and as the basis for a common agreement on the use of NDs within the vehicles in a safe and user friendly way. It was identified that some of the ESoP recommendations are applied already by the main NDs manufacturers while other need more work. The need for the inclusion of ND manufacturers in the discussions about further improvements of ESoP was also identified.

#### **3.9.2. Business models - results of the session**

Paul Kompfner from ERTICO, presented the results of the session, as they were identified by the session's participants (ANNEX C).

The main conclusions of the business models discussion could be summed up as follows:

- There is a basis for a sustainable relationship between OEMs and the ND industry, and the Nomadic Device Forum could serve as the meeting place to agree how to make future products that would be safer for the user, and create a sustainable and profitable market for both sides; it was recommended to set up a "Business Group" to discuss these issues further;
- There is potential for a win-win business for both the automotive and nomadic device industries through developments expected over the next 5-7 years, e.g. to enable e-Call for OEMs, to enhance ADAS and to provide Telematics and traffic management services efficiently;
- There is need to define better the elements of a common business model, based on products to improve driver safety when using NDs. It was important to define appropriate requirements (not full automotive grade) for portable devices intended to be used in the vehicle, so that some kind of certification of integration solutions could be introduced – a sort of "quality seal".

### **3.9.3. Towards a Nomadic Devices Gateway – results of the session**

Angelos Amditis from ICCS presented the results of the session. Summarizing the following points were identified by the session's participants (ANNEX D).

- According to the updated ESoP on HMI, the definition of the “Nomadic Devices” is: *non-stationary devices, which accompany people whilst travelling*, whereas examples of such devices are the mobile phone, PDA etc.
- There is a general consensus towards a common gateway approach (or a set of common interfaces)
- Clear benefits for all stakeholders (OEMs, ND manufacturer, Tier1 suppliers, end users). If we go for a standard solution we need to offer more functionality to make it worth.
- Costs should be under control - sharing between stakeholders should be achieved.
- Standardisation could be a future solution but the approach that gained consensus is the one of de facto standards (identification of solution from a strong group, test, gain acceptance, be de facto standard, adopt existing CE standards).
- Possibly different standards for mechanical, electrical and communication integration.
- The CE4A platform could be an opportunity or could create problems if it is not open enough & fast enough to avoid parallel initiatives (the DVD example).
- SW common solutions much easier than HW solutions.
- Key issues to be solved:
  - ⇒ Interaction – simple and easy to use interfaces: no need for complex actions;
  - ⇒ Communication;
  - ⇒ Mechanical – Electrical issues – Physical integration.
- Certification is important for the customer to make sure that everything works as promised. Could be problematic in terms of complexity and time. A solution could be a minimum common set of specs to be certified.
- Major non technical obstacles:
  - ⇒ Legal issues;
  - ⇒ Responsibilities definition;
  - ⇒ Costs sharing;
  - ⇒ Absence of mobile phone manufacturer from the discussion.

- From the technical point of view the consensus is that what is needed to implement the above is available and it is only an issue of decision and integration in order to reach a first solution. Additional research is needed for the next generation of solutions especially in issues related to interaction, connectivity and management of information. The most promising technologies for the near future have been identified: Bluetooth and USB.
- Different levels of integration needed – need for information management to coordinate both onboard and nomadic devices. Management of I/O resources is a key issue. Use of other vehicle resources (e.g. external antennas).
- Possibly NDs should not be considered as one whole but different solutions may be needed for different types of them.
- A success story (example also for ND?): trucks' manufacturers understood the need for a common gateway and vehicle connector for Telematics, created a relevant forum and provided a practical common solution within 12 months!
- General consensus that this forum needs to continue and to be reinforced (in whichever form).

### **3.10. Open floor discussion & next steps**

André Vits thanked the presenters and commented that the results of the discussions should be used and are very helpful for the evolution of the work. Awareness is a big issue and the European Commission will provide assistance on this area. Active is better than passive. Mr. Vits stated that he is in favour of the continuation of the nomadic device forum activities. A place where all different players can work is a must have. He asked the participants of the workshop to propose a way in order to move towards a standardised gateway. This work includes:

- The implementation of a roadmap;
- The identification of the stakeholders;
- The follow up of the activity.

Lutz Eckstein commented that we should concentrate to the following issues:

- Does everybody that should be involved know the existence and contents of the ESoP?
- Is the ESoP sufficient?

Moreover, Mr. Eckstein clarified that two different subjects should be addressed separately:

- The way that the ESoP will be applied and agreed by all;
- The definition of the standard gateway.

We should not aim at their parallel implementation, so as to avoid sidetracks. It is helpful to distinguish between the different levels of communication.

Valérie Moutal commented that the driver should have the legal responsibility (according to the ESoP), however, the means with which the driver will be able to use in a proper and safe way the nomadic devices, should be provided.

André Vits asked the participants, whether it would be possible to discuss the legal issues under the umbrella of the nomadic devices forum.

Wolfgang Reinhardt replied that this would mean that the nomadic devices forum would have to speak about product reliability issues, thus potential use cases should be defined. ACEA cannot take the responsibility of such an action, but if the initial questions are defined, ACEA will study them and is willing to provide assistance.

The presentations of the workshop are to be uploaded to the AIDE website (<http://www.aide-eu.org/>) and to the European Commission website ([www.ec.europa.eu/intelligentcar](http://www.ec.europa.eu/intelligentcar)).

### **3.11. *Wrap up, conclusions & closing***

André Vits summarised the main points of the workshop and asked whether it would be efficient to bring the AIDE nomadic devices forum under the eSafety umbrella (since AIDE IP is close to the completion of its activities). The responsible parties of the nomadic device forum should think about that possibility and respond.

Paul Kompfner, as the manager of the forum underlined that ERTICO has not supported the nomadic device forum for economical reasons. Instead, ERTICO supports the forum with its own funds because it is considered as a really important initiative. Mr. Kompfner commented that probably what the area needs is a forum that supports the commercial issues.

Lutz Eckstein added to the above that it should be distinguished for which case we would need a nomadic device forum and its scope should be clear to all interested parties.

Angelos Amditis, as a co-manager of the nomadic devices forum emphasised to the fact that although AIDE IP is close to its completion, ICCS, as a governmental institute, will continue to support the nomadic devices forum with its internal resources. Mr. Amditis added that ICCS agrees with the proposal to split the forum into the aforementioned two different areas, which could be probably hosted under different umbrellas if this is considered efficient. This umbrella could be the CE4A Forum for more commercial issues and the eSafety for more research oriented issues. Other ideas are also welcome.

It was agreed that the Organising Committee of the Forum with the support of EC and ACEA would present a proposal for this issue plus a set of actions to continue and implement the discussions that took place in this workshop.

André Vits closed the meeting and thanked the AIDE Integrated Project, ACEA, ERTICO, and the organising committee of the forum and the participants of the workshop.

## 4. Conclusions

The Forum has been very successful until now in mobilising a broad selection of people from organisations involved in the issues of nomadic device integration in the vehicle. Both the OEM and the consumer electronics sector have been well represented in general during the latest Forum meeting. Despite this fact, the Forum has not been able to agree on a cross-sector common strategy for the way that portable devices should be better integrated into the vehicle. It has been concluded that not much progress has been made on commercial issues as this is a rather competitive area and it seems to be necessary to know more about the technical cooperation possibilities first. This implies a need for more companies to participate from the portable device sector, and also that business, marketing and product line people participate from all companies involved, not just research and development engineers. Concerning the HMI and safety issues of nomadic device integration, more information is still needed based on real-life experience of the actual risks posed by nomadic devices in the way they work, their interaction with users and how they are installed in the vehicle. In addition, the main scope of the meeting was reached, i.e. to raise awareness on the ESoP for HMI across the different stakeholders, including the OEMs and the nomadic devices manufacturers.

As AIDE is close to its completion, it was decided that as from October 2007 the Nomadic Device Forum should become part of the eSafety initiative of the European Commission. This continuation route through the eSafety WG can be considered as a major success. ACEA and MEDION now equally chair the Nomadic Devices Forum, while the steering committee of the Nomadic Devices Forum will include the key and more active players of the previous one with the inclusion of at least one ND manufacturer's representative foreseen for the future.

The group has drafted its Terms of Reference while a Memorandum of Understanding on safe integration of infotainment systems is under preparation as well. The Nomadic devices Forum committee has organised the next Nomadic Devices Forum meeting on this topics, at ACEA offices, Brussels, Belgium on the 10th April 2008.

Following the above, it has also been decided that the participation in the NDF will be self-financed by the participants. Small funds might become available under eSafety Support (organization of conferences, etc.) or under the eSafety Support Study budget.

In the future, consumer organizations might be invited to carry out some consumer research in how user see nomadic devices, which problems they incur and what would they expect from such devices in the future, while the topics might also become topic of a EUROBAROMETER study.

## References

[1.] GST Integrated Project website: <http://www.gstproject.org/>

## ANNEX A – PARTICIPANTS LIST

No	Name	Company	Initials
1	André Vits	EUROPEAN COMISSION	AV
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5	Lutz Eckstein	BMW GROUP	LE
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9	Andreas Weimpar	HARMAN BECKER	AW
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11	Angelos Amditis	ICCS	AA
12	Katia Paglé	ICCS	KP
13	Arne Tyb'l	iPUBLISH GmbH / MERIAN	AT
14	Adam C. Denman	MAGNETI MARELLI	AD
15	Mark Jendrzok	MEDION AG	MJ
16	Jochen Katzer	NAVIGON AG	JK
17	Michel Fond	ORANGE	MF
18	Jacques Garcin	ORANGE	JGA
19	Ralf Becker	Panasonic Automotive Systems Europe	RB
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22	Christian Rousseau	RENAULT SAS	CR
23	Andreas Engelsberg	ROBERT BOSCH GmbH	AE
24	Kenneth Larsson	SCANIA CV AB	KL
25	Gustav Markkula	VOLVO Technology Corporation	GM
26	Wolfgang Reinhardt	ACEA	WR
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## ANNEX C – BUSSINESS MODELS SESSION: PARTICIPANTS LIST

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3	Arne Tyb'l	iPUBLISH GmbH / MERIAN	AT
4	Adam C. Denman	MAGNETI MARELLI	AD
5	Wolfgang Reinhardt	ACEA	WR
6	François Poncet	MAGELLAN	FP

## ANNEX D - TOWARDS A NOMADIC DEVICES GATEWAY SESSION: PARTICIPANTS LIST

No	Name	Company	Initials
1	Rolf Brandes	DELPHI DELCO	RB
2	Angelos Amditis	ICCS	AA
3	Katia Paglé	ICCS	KP
4	Jochen Katzer	NAVIGON AG	JK
5	Ralf Becker	Panasonic Automotive Systems Europe	RB
6	Lars Reger	SIEMENS	LR
7	Martin Fesefeldt	VOLKSWAGEN	MF
8	Andreas Engelsberg	ROBERT BOSCH GmbH	AE
9	Kenneth Larsson	SCANIA CV AB	KL