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Final Agenda

24/10/2007		
Time	Topic	Presenter
10:00 – 10:10	Welcome Address	André Vits, European Commission
10:10 – 10:15	Approval of the Agenda	André Vits, European Commission
10:15 – 10:45	ESoP: Status & Outlook	Valérie Moutal, European Commission
10:45 – 11:10	Perspective of Automobile Manufacturers	Lutz Eckstein, BMW
11:10 – 11:35	Perspective of Nomadic Devices Manufacturers	Mark Jendrzok, Medion
11:35 – 12:00	Perspective of Suppliers	Gernot Spiegelberg, Siemens VDO
12:00 – 12:15	Perspective of Service providers	Michel Fond, Orange
12:15 – 12:30	Perspective of Users	Johann Grill, ADAC
12:30 – 13:30	Lunch break / Networking opportunities	
13:30 – 15:30	Breakout sessions	
	HMI & safety	Moderation: Valérie Moutal
	Business models	Moderation: Paul Kompfner
	Towards a Nomadic Devices Gateway	Moderation: Angelos Amditis
16:00-16:30	Coffee break / Networking opportunities	
15:45 – 16:00	Results of the breakout sessions	Breakout moderators
16:00 – 16:50	Open floor discussion & next steps	André Vits, European Commission
16:50 – 17:00	Wrap up, conclusions & closing	André Vits, European Commission

Summary

The specific workshop of the AIDE Nomadic Devices Forum was the sixth (are you sure? I really cannot remember that we had five other Forum meetings before?) one organized within the framework of AIDE project. The European Commission (EC), ACEA that chairs the Nomadic Devices Forum and hosted the workshop, ERTICO that is the manager of the Nomadic Devices Forum and ICCS that is the co-manager of the Nomadic Devices Forum organized the workshop.

AIDE is a 6th FP EU co-funded integrated project on the development of an Adaptive and Integrated Human Machine Interface.

The AIDE Nomadic Devices Forum Pan-European Workshop aimed to bring together all 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 standardized) 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, mainly higher-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” and the e-safety web site where the final minutes and the presentations of the workshop can also be found.

Minutes

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 for the EU presidencies like e.g. Germany in first half of 2007 and for Slovenia in 2008. 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.

2 ESoP: Status & Outlook

Valérie Moutal from the European Commission presented the ESoP II strongly 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 to the Nomadic Devices issues. An overview of the eSafety Working Groups results was provided (The presentation is given in ANNEX I):

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 for use 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 in 2005 was composed by Design Principles and Recommendations for Safe Use (RSU). Its scope was to address information and communication systems and its human machine interface.. 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 22nd 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 adopt 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 views as well. This is still an outstanding activity to be done by the EC.

The EC should also seek the involvement of all 27 Member States, 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. She also noted that the ESoP was originally designed for functions aimed to be used while driving.

Concluding, Mrs Moutal asked all participants to visit the new website of the European Commission: “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 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 (ANNEX II).

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 alone by a specific industry (such as the Nomadic Devices industry).

Rapid increase of the number and functionality of the systems lead 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 other 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. Whenever violations are observed enforcement need to be applied by the road authorities..

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 AUDI, Daimler, 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.

(The presentation is given in ANNEX II)

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 given in ANNEX III.

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) 30⁰ 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.

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 (ANNEX IV).

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.

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 (ANNEX V).

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 18th 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 in 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.

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 (ANNEX VI).

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 ANNEX VI. 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 was presented.

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.

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.

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 Jendzok 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's users seem not to be 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.

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 IX) 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 the standards on their own and that the absence of the mobile industry is a problem for the nomadic devices forum (Orange is there). 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 (speaking for PANASONIC). 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?

9 Results of the breakout sessions

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 A). 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 the main NDs manufacturers apply some of the ESoP recommendations already while other need more work. The need for the inclusion of ND manufacturers in the discussions about further improvements of ESoP was also identified.

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 B).

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”.

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 C).

- 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).

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).

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 the 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.

Action List

- To promote cooperation among the different stakeholders and the between nomadic device manufacturers in particular, the meeting **minutes** of the last Nomadic Device Forum (NDF) will be sent to the complete list of interested partners and not just the participants; **presentations** will be posted on the AIDE website (special section for the NDF) with the intention to create a separate website for the NDF later.
- The next **Nomadic Device Forum** will be held in conjunction with the AIDE final event in Gothenburg (week of **14 - 18 April 2008**). AA will send out a proposal for the exact date.
- A **preparatory workshop** for the next NDF Plenary Meeting will be held in February; PK & AA responsible for preparation
- A **workshop** on potential **business models** will be held around the end of February, beginning of March in Brussels; WR responsible for invitation
- A workshop of the NDF organization committee for the **MoU preparation** will be held in February. AA to propose dates. Meeting location: t.b.d. (Athens proposed)
- ERTICO should adjust the title of the next **FESTA workshop**. The title could be “Workshop on Nomadic Devices FOT”, while a sentence “With the support of the NDF”, can follow the title.
- PK and WR to contact **CE4A** (BMW) to see if they want to be part (as a working group or something equivalent) of the Nomadic Devices Forum or linked in the one way or the other to the activities of the NDF in order to avoid parallel activities and double work.
- The Nomadic Devices Forum, after March, should go under the eSafety Forum umbrella. The next **eSafety Steering Group** meeting is on the 30th of January. PK and AA will prepare a formal proposal (incl. ToR and a workplan for 2008), which will be presented to the eSafety Steering Committee for approval. This work has to take place prior to 30 January 2008.
- WR to talk to Mark Jendzrok from Medion to become one of the **co-chairs** of the Nomadic Devices Forum.
- The **steering committee** of the Nomadic Devices Forum will remain at present as it is today with the inclusion of at least one ND manufacturers representative foreseen for the future.
- Participation in the NDF has to 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.
- 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. Might also become topic of a EUROBAROMETER study. JJ to talk to FIA to see how this can be taken up under eSafetyAware.

ANNEX A – HMI & SAFETY SESSION: PARTICIPANTS LIST

No	Name	Company	Initials
1	Johann Grill	ADAC e.v.Munich	JGR
2	Marcel Vierkötter	BAST	MV
3	Lutz Eckstein	BMW GROUP	LE
4	Uwe Petersen	DAIMLER AG	UP
5	Valérie Moutal	EUROPEAN COMISSION	VM
6	Andreas Weimpar	HARMAN BECKER	AW
7	Mark Jendrzok	MEDION AG	MJ
8	Michel Fond	ORANGE	MF
9	Sabine Spell	VOLKSWAGEN	SS
10	Christian Rousseau	RENAULT SAS	CR
11	Gustav Markkula	VOLVO Technology Corporation	GM
12	François Poncet	MAGELLAN	FP

ANNEX B - BUSINESS MODELS SESSION: PARTICIPANTS LIST

No	Name	Company	Initials
1	Paul Kompfner	ERTICO-ITS Europe	PK
2	Thomas Nickle	HARMAN BECKER	TN
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 C - 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