eSafety Deployment Workshop and Awards Ceremony

Diamant Conference & Business Centre

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Final Report

Scene Setting

1. Opening and Welcome, Fabrizio Minarini, European Commission

On Europe's roads 10% of capacity is affected by congestion, which amounts to about 8000 kilometres at a standstill, and the economic cost of this amounts to approximately 1% of Europe's GDP. Moreover, transport accounts for nearly 71% of Europe's consumption of oil, of which 60% is attributed to road transport. Importantly, more than 40,000 fatalities occurred on Europe's road network during 2005. Taken with the additional 1.7 million injuries and the fact that 93% of road accidents involve human error, these figures are unacceptably high. Additionally, while new technologies with the potential to improve safety have been under development for many years, the market implementation of these has been very slow, in some cases spanning several decades.

Consequently in response to these circumstances, the European Commission launched in 2006, the Intelligent Car Initiative. This focuses on safer, cleaner and smarter vehicles. The three pillars on which it is based are: co-ordination and support for stakeholders; research and development; and creating awareness. Since the launch of the initiative there have been several major achievements in all three areas. These include: progress towards wider acceptance within the Member States on the eCall System with more signatures added to the Memorandum of Understanding; the formulation of a strategic research agenda; increased awareness; etc. However, as the second Communication on the Initiative shows, much more needs to be done. In particular there is now a need to consider new actions, among them the formulation of an ITS Deployment Roadmap in 2008, for which the Communication will form a building block.

In the area of safer vehicles the goals are to reach a circumstance where all Member States have signed the eCall Memorandum of Understanding, with pilot tests being carried out in 2007-2008, and upgrading of the emergency infrastructure completed by 2010. Additionally, work on relevant standards should be completed by mid 2008. The Commission will also start negotiations with representative organisations of car manufacturers in Europe, Japan and Korea towards a voluntary agreement to include eCall in all new cars starting from 2010.

Depending upon progress in reaching agreement, the Commission envisages considering the possibility of a mandatory requirement. Several other actions are also planned: Field Operational Tests; development of guidelines for the use of ITS; and speeding up the deployment of ESC.

Actions foreseen in the area of cleaner vehicles include establishing a working group to produce, by 2008, a methodology for measuring the impact of ICT in reducing CO2 emissions. Following this the Commission will address the best way forward to roll-out the most effective low-CO2 technologies with respect to both vehicles and infrastructure.

Further actions are also planned for the area of smarter vehicles. These include addressing the problem of safe fixing and safe use of nomadic devices in vehicles, and the safe integration of these with embedded on-board systems. Co-operative systems are also prioritised for research activities, and there is also an aim to move towards agreement on an open, pan-European standardised and interoperable architecture for co-operative systems.

2. **Clean and Safe Mobility-The New Lifestyle, Stefan Jenzowsky, Steinbeis University Berlin**

The arrival of the internet has enabled new business models and radically transformed the nature of established sectors such as telecommunications, forcing operators to respond in directions that are not connected with traditional interests. One of the drivers for this has been convergence of communication and computing technologies. Over the coming years, similar profound changes may well be seen in the automotive sector. Issues and challenges are already becoming apparent.

Of particular note is the difference in development times and product lifecycles between the automotive industry and the electronic devices sector (e.g. iPod devices, add-on navigation devices, etc.). The automotive industry is used to thinking and responding within a timeframe of years, while internet and electronic devices sectors think and respond in terms of months. The result of this is that buying systems built into vehicles does not make much sense. To keep technologically up to date, it is far better for customers to buy add-on devices, and this poses serious threats to revenues for the automotive sector. This change is also opening up new opportunities for outsiders to enter the automotive sector, and it may happen that in the future, cars will become yet another windows-based system!

There is evidence that entertainment is becoming an increasing driver for developments, even for navigation systems. This includes providing more

information about surroundings, not just location-based services like nearby restaurants, but also information such as property prices. Users of navigation devices are also demonstrating behaviour like trying to beat the predicted arrival time, and some systems even provide information about alternative routings with traffic speed information, but often this involves routing vehicles through built-up areas with speed restrictions. This type of behaviour has a potentially negative impact on road safety.

The internet is a key area for the future of the car, but not just through information provision. Increasingly people are becoming involved in online communities, and these can be very specialised, and they do affect purchasing decisions. Moreover, these communities are increasingly used by mature consumers with spending power, and the user age range 35-55 is experiencing the biggest growth rate. The internet also provides a means for manufacturers to connect with customs in another way, by involving them in the product development process through virtual words such as “Second Life.” But this internet based mind-set also brings its own safety concerns, for the internet world tends to create a culture of freedom and unrestricted activities. This has serious implications, for it means that the older ways of trying to change human behaviour by laws and regulations does not work so well; often internet users find a way around these. This places more emphasis on trying to educate and convince people and providing features that they will find interesting and which will excite them. One interesting example is the energy points "game". Therefore it is necessary to become much better at understanding human behaviour. For example, risk compensation might be a key issue in safety. Some theories point to people maintaining risk at a stable level, thus if they perceive that vehicles are safer they may drive faster or more recklessly because they know the car is safer and can deal with this. A way forward might be to change this perception of risk level, i.e. to make some situations feel more unsafe as well as sell safety in combination with the customer’s lifestyle and feeling of comfort.

Deployment of eSafety in Different Regions

3. Deployment Status and Outlook, Priorities and Best Practices in Japan, Setsuo Hirai, National Institute for Land and Infrastructure Management

The circumstance in Japan is characterised by the development and deployment of both in-vehicle safety systems, some standard and others optional, and infrastructure-based systems, with some functionality being based on communication between the two. Of particular note is the Japanese development referred to as Smartway.

Smartway builds on earlier developments. The first of these is VCIS, deployment of which began in 1996. As of 2007 there were 18 million VCIS units installed on vehicles. It is estimated that VCIS will result in a reduction in transport sector CO2 emissions of 2.4 million tons by 2010. The next step in the development of ITS in Japan was the introduction of Electronic Toll Collection (ETC), which enables cashless transactions. This is used for toll payments but also for other types of payments such as ferry fares, car parking fees, etc. In mid 2007 over 19 million ETC units were in use, and ETC has reduced the congestion that results from queuing at toll road payment stations. In the Tokyo area it is estimated that congestion resulting from these toll queues has been reduced by approximately 97%. Moreover, the system also reduces transaction times in other applications such as car parking. In 2007 ETC was extended to two wheel vehicles.

The Smartway concept takes developments further by introducing more advanced tolling and information services, and by adding driver assistance systems. It is based upon the increased penetration of in-car systems and is a step forward to the next generation of system. The concept requires that all the various functions be included into one on-board unit. This should have a capability to be expanded as new functionality is developed so that users will not need to buy additional units in the future. Moreover, the addition of driver assistance functions also requires units that typically respond in less then one second, which is a more demanding requirement than that previously needed for toll applications.

The creation of this open on-board unit has involved public-private partnership in research, as well as demonstration and testing. Work on Smartway started in 2004, and commencement of services will take place from 2007 onwards. In addition to this, a new IT-driven reform strategy has been addressed aimed at creating co-operative safety systems This will involve large scale tests on public roads in 2008 and a nationwide roll-out in 2010.

A major demonstration of Smartway was undertaken in the early part of 2006 to showcase the results of the joint public-private research. This was followed by major road trials, which took place in 2007. For this, routes and locations needing countermeasures were identified and services corresponding to the identified needs were implemented. For the trials, 11 car manufacturers and 18 manufacturers of on-board units were involved and 60 vehicles were equipped for over 2000 test runs. Functions tested included routing information based on obstacles ahead, routing information based on road conditions ahead, merging assistance, and routes for map-linked services.

Speed alert has also been tested in Japan, mainly in dangerous areas and this involved detecting overspeed and issuing a verbal alert to drivers. On the matter of who pays for the infrastructure for such systems, this is shared in Japan between public and private sources, since some elements of the network have

been privatised, or include areas belonging to businesses, for example, fuel stations.

A Smartway demonstration and conference was held in October 2007. From surveys of participants a number of interesting conclusions emerged, with 89% of participants giving positive responses, and merging assistance and parking fee settlement being particularly well received. With regard to purchasing ITS functions, 59% said they would, but many said they would only do so when they replaced their car. It was also clear however that ITS would have to be cheap, and it would have to been extended to many areas.

For the future, there will be developments in eCall capability, but this is something that falls within the remit of the emergency services in Japan.

4. Deployment Status and Outlook, Priorities and Best practices in the US, Brian Knibb, Knibb Gormezano and Partners

In 2005, some OEMs in the US requested a study to compare circumstances in the US with those in Europe, to better understand commonalties and differences, and also including reference to the Japanese situation. The scope of the study was on cars, SUVs, pick-ups and minivans.

A 2005 comparison of the forces driving active safety systems developments in three regions, shows that most factors driving change in the US, including government, the insurance industry, product availability, consumer factors, cost, technology, vehicle integration, and litigation, were mostly negative, or negative to neutral. In Europe and Japan, most of these drivers were neutral. But by 2007 this had changed considerably. In all three regions Governments had a positive attitude. Product availability has become a positive factor in Europe and Japan. In the US there has been some shift form a negative position to a more neutral one with regard to many driving forces, but litigation and technology are still perceived as negative factors.

Some peculiarities of the US market are that there is a strong bias towards passive safety systems, with the attitude being that most people are great drivers. Accidents are seen as the fault of others, and a big car is perceived to protect people. Also a key business issue is the question whether drivers really want active safety and how much they are willing to pay. A key figure seems to be 500 dollars. Less than this and active safety becomes feasible for the mass market, but beyond this number it is seen as being limited to premium cars and competing with other options such as leather seats etc.

Based on comparisons between regions, it appears that US OEMs will be followers, while in Europe premium brands will lead with others following on quickly, but in Japan, the OEMs are experimenting with the home market and then recouping costs by exporting the technology worldwide.

Looking beyond 2010, technology and product availability are expected to become more positive factors driving the adoption of active safety, however, given the litigious nature of the US and more onerous product liability laws, litigation is still expected to remain a negative force.

There is still also a perceived problem in the US with regard to paying for developments. With suppliers tending to pay for technology developments, and technology changing quickly, cost recovery is difficult for suppliers in such short lifecycle environments. Thus it is difficult to see how to breakout from the vicious circle of high price limiting volume, which in turn maintains the high prices. Moreover, it is still not clear who will pay for the vehicle integration, as both OEMs and tier 1 suppliers have stretched resources. OEMs also have the wrong skills-mix, and suppliers are concerned to protect their intellectual property.

As of 2005, expectations were that take-up of safety systems in the US would be very similar to that predicted for Europe. In the US certain systems have become mandatory, but overall this mandatory approach is probably not the best way forward for all types of safety system. Some sort of rating system is probably needed, but one that takes account of the driver, vehicle, and infrastructure. What is important is to get empirical evidence to back-up the rating system.

For the future, a number of major issues need to be addressed. These include dealing with alcohol use, drowsiness, and teenage and elderly drivers. In these respects there is commonality with Europe. However, a further problem for the US is public perceptions of the difference between big and small cars, with the former being wrongly seen as safer, and also differing state regulations. Poor dealer knowledge is also a problem.

The conclusion therefore is that while Europe and the US have some common problems and issues such as business cases and attitudes to mandatory changes, and are both generally moving in the same technology direction, the US has a number of specific issues. These include litigation and concerns about allocating resources to research and development, but also conflicting demands emerging from environmental requirements and the need for cost reduction.

5. Deployment Status in Europe, Fritz Busch, University of Munich

A survey examining the take-up of safety systems in Europe has been undertaken looking at data available in the period 2005-2007, complemented with a questionnaire based survey and interviews with stakeholders. The aim was to understand the change in market penetration for a number of systems in the period considered, to assess the expected market penetration by 2015, and to identify successful and promising strategies.

Useful available data is limited and also undertaking questionnaire-based surveys and follow-up interviews is difficult and time consuming. Nevertheless, the study has revealed a number of important and useful findings and conclusions.

Typically there are several functions such as blind spot monitoring, obstacle and collision warning, and lane departure warning that are generally only available in the luxury car segment. ESC availability is also variable across segments and across Europe, but with positive trends. Penetration into the lower A, B, C segments is low. Given the significant number of cars that fall into the B and C segments, here lies the potential to enhance adoption of ESC. If car manufacturers were to focus on these segments by including ESC as standard equipment, then this would have a significant affect on the overall take-up of ESC.

With regard to adaptive headlights, availability was about 12% of new vehicles sold in 2007, but as an add-on option, and then only in a number of segments. If availability were expanded to include all segments then take-up would also increase. With respect to radar and sensor based systems which enable blind spot monitoring, obstacle and collision warning, and lane departure warning, these were only available in less than 1% of new vehicle registrations in 2007. The potential for increased take-up lies with making the options available in other segments, but this requires packaging these systems utilising the same sensors. The other system where it may be possible to accelerate take-up is with real-time travel and traffic information, where there is good availability and a direct link to mobile navigation with clear benefits. For infrastructure-related systems, such as eCall, speed alert, dynamic traffic management, and floating car data, there are several factors relevant to each that makes increased take-up more difficult.

6. **Best Practice in Promotion of Deployment in Europe, *Han Zwijnenberg*, *TNO***

A benchmarking study of the deployment of IVS across Europe has been undertaken. This was aimed at providing an overview of the circumstance in the EU, with an emphasis on establishing the level of promotional activities and the sustainability of actions to enhance deployment.

The method adopted was based on the AUWE concept, which addresses Awareness (A), Understanding (U), Willingness to Pay (W), and the Equipment of Vehicles (E). A web-based survey was undertaken to collect data in 27 European countries. This was designed to assess level of awareness of IVS, level of promotion of IVS, and the sustainability of actions to enhance deployment of IVS. More than 440 stakeholders were identified and contacted to participate, and 188 people completed the web-based questionnaire.

The results show a lot of variation across Europe. In particular, when it comes to the level of co-ordination among stakeholders vs. the different stages of deployment, only three countries–the UK, Sweden and Germany–have systems widely available on the road. Most other countries are behind, with four in the deployment phase, eight in the promotion phase, and ten in the start-up phase. Several conclusions can be drawn from the study:

At EU level, awareness among stakeholders is generally high, although lower in the New Member States. Interestingly, in stakeholder actions, only a few countries address “willingness to pay”, even though 58% of consumers cite this as a reason for not buying. Moreover, it is evident that co-operation among stakeholders is high in countries with large research programmes. Co-ordination of activities is low in the New Member States, but also in a few other Member States.

At national and stakeholder level, awareness of infrastructure systems is low, except for real-time travel and traffic information. Furthermore, no research has been undertaken on the effectiveness of creating awareness. And interestingly, different stakeholders are taking the lead in driving deployment forward. For example, in the UK it is industry that is the main driver, while in Sweden, Government is leading the way. This shows that there are different approaches to effective deployment.

For the future it is recommended that a strategic vision and supporting policies are essential for all stages: Awareness, Understanding, Willingness to Pay, and the Equipment of Vehicles. There is a need for strong roles at Member State level to ensure support for and awareness of IVS. The EU and Member States need to adopt a stronger role in the adoption of standards. Also benchmarking is an effective tool for tracking results. However, the meaning of best practice is an open issue given that several approaches can work.

Examples of Best Practice in Deployment

7. **Promotion of Deployment in Emerging Markets: Brazil, China, India and South Africa, Mariana Andrade, ERTICO – ITS Europe**

With increasing prosperity in emerging markets such as Brazil, India, China and South Africa, come increasing numbers of vehicles on the roads and more accidents. And a large percentage of the victims are pedestrians. International co-operation with these emerging economies has, as one of its aims, to tackle this problem. Additionally this also provides an opportunity to transfer knowledge and to promote the adoption of European technologies and standards. There is also clear interest from the Governments of these four countries to improve road safety and to discover what solutions are available and to adapt them rather than trying to replicate the technologies.

The roadmap for international co-operation starts with establishing contacts with stakeholders and building relationships. This is very important for several reasons, one of which is that in some countries responsibilities for road safety are decentralised to the level of states. The next phase in the roadmap is identification of local priorities, needs and technologies. From this a gap analysis leads to the establishment of research needs, which in turn leads to research and demonstration projects, and finally the roadmap ends with technology uptake.

In the case of China co-operation spans the whole roadmap, and systems have already been installed. On example of this is the adoption, in Beijing, of TMC thus enabling the provision of Dynamic Traffic Information Services. In the cases of Brazil, India and South Africa co-operation is at much early stage of the roadmap, focussing on building relationships and establishing local needs. However, the hope is that based on the experience gained with China, roll-out can be much faster.

With respect to eSafety a number of priorities have been identified. There is an interest in what the European eSafety Forum has done, and a wish to replicate this in the countries considered, and to share information internationally. Moreover, there is a wish to address vulnerable road users and to consider what can be done to improve circumstances by, for example, creating segregated lanes for cyclists, or providing better crossings for pedestrians.

Given that several world events of a large scale are to be held in each of the four countries over the period up to 2014, a further priority is integrated traffic management. Incident detection and emergency response is also a priority, as is improvement of commercial vehicle operations, especially prevention of vehicle theft, which is high in the target countries. Real time traffic information is a further priority area, especially data management. Priority area seven is public transport, and the application of technologies such as mobile phones, which have a high penetration in these four markets. Finally, the eighth priority is electronic

toll collection, and ensuring, for example, that systems are interoperable and that they will work internationally.

The next step in the process is to establish joint EU-Emerging Country expert working groups, establish more frequent technical meetings, define requirements and undertake feasibility studies, and work towards pilot and demonstration projects.

8. OEM Solutions, Wolfgang Reinhardt, ACEA

ACEA takes on the role of representing the interests of its members in Brussels in relation to the topic of eSafety, among others. Its focus is on the precompetitive, on commonalities, and on the holistic.

New functionality is continually emerging, and systems are being developed and moved into the market adoption phase. However, underlying these developments are several horizontal activities. These include minimum standards, protocols and specifications; dedicated radio frequency for safety related applications; and eSecurity to ensure privacy and to exclude fraud. All these matters now need more serious attention.

With regard to the future for eSafety systems, this will depend upon the political and economic environment. Further deployment will take place, but in the New Member States this will be much slower, given that the vehicles sold in these countries generally do not include the latest technology, and motorists there tend to keep their vehicles for longer. But this is also an increasing phenomenon in the other Member States as well. Also for the future, new targets can be envisaged, beyond the figure of reducing road fatalities by 50% by 2010. Given that over 90% of road accidents involve human error, a challenge for the future is to correct this circumstance. With respect to markets and technology, the 24GHz frequency band and digital cameras should improve applications, and technology improvements should enable the affordable delivery of safety applications.

Penetration rates are very difficult to foresee. It is also clear that applications currently under development, while they may have been successfully demonstrated, will still need improvements, and this will take time. In reality no-one can predict what will happen and which applications will achieve significant penetration in the future, since there are too many factors affecting this. One of these factors may be petrol prices, another may be the decision to buy a used car rather than a new one. Also there is a persisting illusion that mandatory eSafety functions do not add costs to vehicles and do not affect price. This is wrong. Price increases may cause a delay in penetration as people begin to keep their cars for longer, and this will, as a result, delay the achievement of safety benefits. One also has to be realistic about penetration rates, given that it can take three years

to make a new model available on the market, up to six years to introduce a system in all models, and up to 20 years for an OEM to renew its entire model range.

It is possible therefore that aftermarket systems may be a way to speed up penetration, but such add-ons must fulfil the same requirements as embedded systems. It is also sometimes the case that Nomadic Devices offer better solutions.

Best practices to support take-up of eSafety functions do not point to mandatory approaches as the best way forward. ESC for example is not mandatory, but its take-up is significant. What can be seen from this example, is that customer awareness is a key factor, but so is purchasing power and preferences. For example, in the New Member States drivers prefer not to have ESC because of the cost. Nevertheless, by being customer focused OEMs can bring forward new eSafety systems and offer these to customers.

It is also the case that drivers need to be made more aware about eSafety when they are learning to drive. In this respect young people may offer a route towards convincing older drivers (parents) about the need for, and benefits of, eSafety. But it is also the case that many systems are hard to explain, and one needs to experience the system before one can appreciate its value. Therefore, the conclusion is that more attention needs to be placed on users and making them more aware.

9. Infrastructure Based Solutions, Martin Brandner, ASFINAG

In Austria, traffic management is implemented and operated by ASFINAG, a government owned organisation, which is also responsible for road maintenance and toll systems. Road users are ASFINAG's customers, and ASFINAG provides information to help these customers use the motorway network.

Traffic control is based on three approaches. The first is a light one based on variable message signs, and this is used in corridor management where accident rates and vehicle numbers are low. A medium approach is used on roads where vehicle numbers are in the range 50000 to 80000 per day, and here speed monitoring of vehicles is used for traffic route control and optimised routing of tunnel traffic. A heavy approach is used where vehicle numbers exceed 80000 per day. This is based on intersection control and emissions and noise controls.

Implementation of the "Intelligent Road" program is aiming to install traffic management units on about 50% of the motorway network, which corresponds to about 1,100 km. Presently, traffic management units are installed on

approximately 200 km of motorway. Implementation also involved modifying Austrian law to allow traffic management via variable message signs.

The benefits that accrue from the use of traffic management units include improved safety, shorter journey times, and better information for road users. Other benefits are reduced noise and emissions, reduced detrimental economic impact from road accidents, and better administration of the road system with respect to maintenance. One example from the Tyrol area, where the units where installed in 2005, shows a 52 month return on investment, a cost-benefit factor of 3.4, accident reduction of 40%, and a 20% reduction in traffic congestion. Overall the benefits far exceed the costs of the system.

For the future it is planned to continue to roll-out the traffic management units, aiming for about 50% coverage in 2010-2012. Provision of better information to radio stations is also a task that needs to be addressed. A key issue is providing drivers with summarised information and avoiding information overload. It is necessary to be able to work out what is important at a given moment and to give this information to customers. An open question however is whether this information is provided free of charge or at a price.

10. Building up Customer Awareness, Anders Lie, Swedish Road Administration

In Sweden the Road Administration is responsible for roads, with responsibilities that are commonly fulfilled by ministries in other countries. However the problem with road transport is that it is difficult to implement changes because no single organisation has sole responsibility. Moreover, traditionally there has been a tendency to blame drivers for errors. But in Sweden the Vision Zero initiative has now resulted in a circumstance where system designers have responsibility to make the roads safe, with the aim of overcoming the mindset that road fatalities are (almost) taken for granted and accepted as a fact of life.

The take-up of ESC in Sweden is an example of how active intervention can lead to wide adoption. This was done by contacting car companies and importers and raising the issue of ESC with them, discussing its importance, and reaching agreement that it should be fitted on as many models as possible. The manufacturers also became active in promoting the concept to the public, and made a virtue of the fact that they would not be giving customers the choice of whether they should or should not have ESC. As a result, the market penetration of ESC for new cars in Sweden is now over 90%. Interestingly however, the insurance companies did not take a significant role in this adoption, rather they were able to identify the positive impact that ESC has had on reducing injury claims. However, the role of insurance is a factor that needs to be addressed.

In the future there is a need to be more problem oriented and to focus on systems that help to solve specific problems, for example, systems that deal with the problem of drivers trying to drive while under the influence of alcohol. It is also necessary to consider other customer groups such as professional car buyers in companies, who may be more interested in eSafety because of the potential cost benefits. Moreover, it may be possible to use Occupational Health and Safety regulation to push the uptake of eSafety technologies, because at the moment this legislation is not so relevant when it comes to road transport. It is also important to be able to demonstrate, using scientific methods, the impact of innovations. Another issue is to expand the information that is kept in new vehicle registration databases so that it is easier to identify what eSafety functions are included in new cars. At the moment this type of information is not fully recorded. This would help to assess market penetration and identify systems for which promotional activities could be initiated.

Conclusions from the Parallel Breakout Sessions

11. Technological Synergies and Economies of Scale, Edwin Liebemann, Bosch

The aim of the breakout session was to consider learning from each other to speed up deployment of eSafety systems, with a focus on technological synergies and economies of scale. Discussions were focused on active and passive safety systems, driver assistance systems, and communications. A number of conclusions were reached:

There is a need to clearly define end user benefits based on technology, as it is not technology that sells, but its benefits. Sometimes however, the benefits cannot be easily understood. For example, the benefits of an air bag are clear, but the benefits of ESC, ABS, etc. are not always clear since these are more complex systems.

Other means are therefore needed, and one possibility is to extend the 5 star rating used for passive safety. This would need some adaptations for new technologies. In Australia for example, a sixth star has been added for ESC equipment in vehicles.

It is important to continue with awareness campaigns, focusing on the end customer. However there is a need not to overwhelm people with information, and this can be avoided through awareness campaigns focussing on key aspects that will generate a market pull. But it is not enough just to have campaigns; it is

also necessary to monitoring the results, so that when deployment works this can be recognised.

Support should also be sought from politicians who should be involved from an early phase to achieve political acceptance and to help to define legal requirements or to adapt laws. Gaining commitment is important, as ESC in Sweden demonstrates. This is also important for cases when awareness campaigns do not work and it becomes necessary to consider a mandatory approach.

Available technologies also need to be utilised to enhance safety, and systems networked to create new safety functions, so as to avoid generating significant additional costs. For this networking, political support may be needed to ensure international standardisation that will guarantee that the networking works properly.

12. Policy Issues, Fritz Bolte, BAST

The aim of the breakout session was to consider policy issues, not just in relation to governments, but also for all the stakeholders involved in eSafety. The key issue was how policy can be used to increase market penetration. A number of conclusions were reached:

Industry often does not make clear what additional costs are involved in including eSafety technologies. There are good reasons for this, since competitive issues hinder companies from sharing information. Also anti-trust legislation prevents companies talking to each other about costs.

The legal framework may be an issue so it might be a good idea for each eSafety system to be considered against a legal framework, possibly using a matrix, mapping each system against legal framework issues to discover when regulation is needed and what laws need to be changed.

The European Commission has launched regulation concerning the tracking of livestock. This may be important. This, along with the Directive on Electronic Tolling, will prescribe many systems that will have to be fitted to vehicles; systems like GPS. This may provide a basis for other systems that can make use of this technology and the information available. So a way forward may be to build other applications on top of these prescribed technologies and systems.

Driver education and training is also important and this can be used to increase awareness, but only for systems on the market.

Standards are a basis for success, e.g. GSM in mobile phones provided a basis for wide uptake. Therefore standards for eSafety are a key issue.

National legal frameworks may also hinder developments. For example, in Belgium, following an accident, the use of some ITS was forbidden.

On the question of mandatory requirements, a suggested way forward is a phased method, based upon a voluntary approach first, followed by mandatory requirements. For instance, installation of seat belts was voluntary at first, then it became mandatory to install them, then mandatory to use them, and then finally this was enforced. This has led to high level of safety belt use. So the message is start voluntarily, specify a target take-up year, then after say 80% achievement, make a mandatory requirement for the equipment to be installed. Developments should however be monitored to see if further actions are necessary. This should be considered on a system-by-system basis, to see what specific steps are necessary.

Insurance companies might have a significant role to play in furthering deployment, by offering better premiums for vehicles fitted with eSafety technologies.

13. Field Operational Tests to Close the Gap Between R&D and Deployment, Vincent Blervaque, ERTICO – ITS Europe

The aim of the breakout session was to consider Field Operational Tests with respect to: (a) motivation and expectations, (b) a governance framework, and (c) the need for co-operation. A number of conclusions were reached:

There is a growing appreciation of the benefits of Field Operational Tests, which enables a continuation of the testing that has been undertaken in research projects on test tracks, but based on real life testing with meaningful cost benefit analysis and monitoring of human behaviour based on large scale field-testing. This aspect is the missing link between RTD and market adoption. This will enable real life validation and also involve the full value chain and consider user acceptance. Field Operational Tests therefore should have a significant effect on awareness and user acceptance and increase market adoption.

With respect to governance, both the implementation and operational phases need to be considered. There is a need to agree the roles and responsibilities of the different stakeholders and identify which ones will have a direct role and those that will analyse results (indirect role). Tests must take account of the type of systems (in-vehicle, information systems, or co-operative systems). Depending upon this, the stakeholders may have different roles and responsibilities. It is also important that all the necessary stakeholders from different levels (local, regional, national and European level) are present. All relevant stakeholders

should be involved in the discussions and should clearly demonstrate their interest in the Field Operational Tests and commit to the tests.

There is a clear need for co-operation among stakeholders to create common understandings. Co-operation however does take time. There is a need to leverage existing experiences of Field Operational Tests at national level as well as US and Japanese experiences. The big challenge will be to undertake Field Operational Tests at European level, which has not been previously attempted. This will involve a big investment in equipment, which is expensive, and all stakeholders involved should share the costs. It is also necessary, because of these high costs, to ensure that results are valid. It should be possible to reuse data, to transfer the data to different geographical levels, and the data should be meaningful for making comparisons, since, given the costs, it will not be possible to re-run the Field Operational Tests. Comparable accident causation data is also needed across the different geographical levels so that comparisons can be made.

Overall Conclusions

14. Concluding Remarks, Risto Kulmala, VTT

According to the presentations it is apparent that for many systems there is still very low penetration. This is connected to the many obstacles still remaining, which include: customer awareness, understanding, and willingness to pay; equipment and systems; legal and institutional issues; business models and cases; and to some extent, also technologies. There are, however, also good examples of some systems quickly advancing such as ESC, navigation, and tyre pressure monitoring.

The workshop also highlighted some good examples from promotion and acceleration of deployment. These good experiences and examples need to be transferred to other systems and cases. The workshop also made it very clear that the trends, problems, and also solutions are global in nature. One global fact is that stakeholder cooperation is extremely essential for deployment.

All in all, the workshop provided evidence of much interest in deployment issues. The workshop attracted in total about 100 participants. The results will be utilised in the Implementation Road Maps Working Group, which tries to monitor and support the road maps aiming at the deployment of priority eSafety systems. The results will naturally be disseminated and utilised all over the eSafety Forum and its various Working Groups and activities. Of course, the participants themselves hopefully can make full use of the results.

The success of this workshop indicates that it is fruitful to continue with the workshops in the future. For 2008, the topic of "benefits of eSafety systems" has been proposed, but all other proposals are also welcome.

eSafety Deployment Workshop and Awards Ceremony

Diamant Conference & Business Centre

Bd. A. Reyerslaan 80, B-1030, Brussels

Wednesday, 14 November 2007, 09:00 – 17:15

Final Agenda

Setting the scene

Chair: Risto Kulmala, Co-chair IRM WG

9:00 – 9:30	**Coffee and registration**
9:30 - 9:45	**Opening and welcome** Fabrizio Minarini, European Commission
9:45 – 10:15	**Clean and safe mobility – the new lifestyle?** Stefan Jenzowsky, Steinbeis University Berlin

Deployment of eSafety in different regions

10:15 – 10:45	**Deployment status and outlook, priorities and best practices in Japan** Setsuo Hirai, National Institute for land and Infrastructure Management
10:45 – 11:15	**Deployment status and outlook, priorities and best practices in the US** Brian Knibb, Knibb, Gormezano & Partners
11:15 – 11:35	**Coffee Break**
11:35 – 12:05	**Deployment status in Europe** Fritz Busch, Technical University of Munich
12:05 – 12:35	**Best practices in promotion of deployment in Europe** Han Zwijnenberg, TNO
12:35 – 13:30	**Lunch**

Awards ceremony

13:30 – 14:00	**Presentation of the first "eSafety Deployment Awards"** Ivan Hodac, ACEA

Examples of best practices in deployment
Chair: Hans-Jürgen Mäurer, Co-Chair IRM WG

14:00 - 14:20 Promotion of eSafety in emerging markets: Brazil, China, India and South Africa
Mariana Andrade, ERTICO - ITS Europe

14:20 - 14:40 OEM solutions
Wolfgang Reinhardt, ACEA

14:40 - 15:00 Infrastructure-based solutions
Martin Brandner, ASFINAG Verkehrstelematik GmbH

15:00 - 15:10 Introduction to the breakout sessions
Risto Kulmala, Co-chair IRM WG

What can we learn from each other

15:10 - 16:10 Breakout sessions with coffee

What we can learn from each other in order to speed up deployment

A) Technological synergies, economies of scale
Chair: Edwin Liebemann, Bosch
Room Vesalius

B) Policy issues (PPP, pre-commercial public procurement, legislation, incentives, lead markets …)
Chair: Fritz Bolte, BAST
Room Darwin

C) Field Operational Tests to close the gap from R&D to deployment
Chair: Vincent Blervaque, ERTICO - ITS Europe
Room Edison

Awareness and conclusions

16:10 - 16:30 Building up customer awareness
Anders Lie, Swedish Road Administration

16:30 - 17:00 Conclusions from breakout sessions
Chairs of Sessions

17:00 - 17:15 Closing remarks, Risto Kulmala, Co-Chair IRM WG

17:15 Adjourn

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List of Participants

Last name	First name	Organisation
Alkim	Tom	Rijkswaterstaat (RWS)
Andersson	Espen	European Commission - DG INFSO
Andrade	Mariana	ERTICO - ITS Europe
Aparicio Izquierdo	Francisco	INSIA-UPM
Arndt	Martin	ETSI
Bangsgaard	Jacob	FIA Foundation
Baptista	Kara	eSafety Support
Barrio	Javier	eSafety Support
Blervaque	Vincent	ERTICO - ITS Europe
Boethius	Eva	European Commission - DG INFSO
Bolte	Fritz	BASt Bundesanstalt fuer Strassenwesen
Botman	Wil	FIA
Brandner	Martin	ASFINAG Verkehrstelematik GmbH
Breuer	Joerg	DaimlerChrysler AG
Busch	Fritz	Technical University of Munich
Camolino	Rui	Brisa
Carrotta	Alessandro	eSafety Support
Curci	Natalino	Polidream/Autostrade per l'Italia
Cyran	Yolande	European Commission - DG Enterprise & Industry
Davila Gonzalez	Emilio	European Commission - DG INFSO
De Meyer	Pieter	Belgian Ministry (FPS) for Mobility and Transport
De Schaetzen	Magali	eSafety Support
Eppel	Friedrich	ÖAMTC
Ferreira	Francisco	European Commission - DG INFSO
Franzén	Stig	Chalmers Industriteknik - CIT
Friedrichs	Heinz	Bosch
Gaillet	Jean-François	Ygomi
Godart	Julie	NAVTEQ

Hagleitner	Walter	ADAS_Management_Consulting
Hallström	Bengt	SRA
Hedlund	Björn	CLEPA
Heiber	Irmgard	European Commission - DG INFSO
Henchoz	Jean-Michel	DENSO AUTOMOTIVE
Hirai	Setsuo	National Institute for Land and Infrastructure Management
Hodac	Ivan	ACEA
Hoefs	Wolfgang	European Commisson
Holmberg	Elina	European Commission - DG INFSO
Holt	Anders-Godal	Norwegian Public Roads Administration
Jaaskelainen	Juhani	European Commission - DG INFSO
Jacobs	René	Belgian Road Research Centre
Jenzowsky	Stefan	Steinbeis University Berlin
Kenis	Eric	European Commission - DG TREN
Knibb	Brian	Knibb Gormezano & Partners
Kulmala	Risto	VTT
Labudek	Bernhard	ADAC e.V.
Laurell	Anu	Ministry of Transport and Communications, Finland
Lenz	Olivier	FIA European Bureau
Lie	Anders	Swedish Road Administration
Liebemann	Edwin	Robert Bosch GmbH
Lindholm	Rasmus	Airbiquity Inc.
Machado	Gary	112.eu
Maes	Willy	European Commission – DG TREN
Malenstein	Jan	Dutch National Police Agency
Mäurer	Hans Jürgen	DEKRA Automobil GmbH
Medevielle	Jean-Pierre	INRETS
Minarini	Fabrizio	European Commission - DG INFSO
Mousel	Thierry	IEE
Moutal	Valérie	European Commission
Nielsen	Michael	ERTICO - ITS Europe
Niggestich	Roland	Federal Ministry of Transport, Building & Urban Affairs
Oberst	Gerald	Hogan & Hartson
op de Beek	Frans	TNO
Palmquist	Ulf	EUCAR
Pastore	Sandra	Robert Bosch GmbH

Patrascu	Irina	European Commission - DG INFSO
Pearsall	Thomas	EPIC
Perez Losa	Pedro Alfonso	IR - LISITT (UVEG)
Potters	Paul	Connekt / ITS Netherlands
Potvin	Michel	Renault
Reinhardt	Wolfgang	ACEA
Rodríguez	José	FITSA
Roosen	Gaby	eSafetyAware!
Rydmell	Christer	SRA, Vägverket
Sansone	Fulvio	Oracle
Schettino	Monica	ERTICO
Silva	Irina	eSafety Support
Steiner	Rene	European Commission
Trenor Escuin	Tomás	IR - LISITT (UVEG)
van der Kroon	Paul	CEDR
Vest	Klaartje	TomTom
Walta	Leonie	Delft University of Technology Faculty of Technology, Policy and Management
Warkentin	Egon	Siemens VDO Automotive AG
Wilkerson	Sheryl	Ygomi
Zwijnenberg	Han	TNO