



European Commission Specific Support Activity



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SIXTH FRAMEWORK PROGRAMME

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Review: 2nd International Workshop on Vehicle Communications, 13th Oct. 2006, London, UK (by COMeSafety)

The 2nd International Workshop on Vehicle Communications took place in London on 13 October 2006, one day after the World ITS World Congress. The UK Department of Trade and Industry (dti) hosted the workshop in its Conference Centre at Victoria Street in London. The event was opened and chaired by Juhani Jääskeläinen from the European Commission, Directorate General for Information Society and Media (EC DG INFSO). Further Opening remarks were given by Setsuo Hirai (MLIT, Japan) and Ray Resendes (DOT, USA).

The 2nd International Workshop on Vehicle Communications followed its predecessor of the same name at San Francisco, California, in autumn 2005. This time more than 100 delegates, mainly

from Europe, the USA and Japan, attended the highly successful event on Vehicle Communications. Because of the numerous attendances of



Japanese ITS experts, the organizers offered a Japanese-English simultaneous translation, which was successfully maintained by Westminster Sonus.

The workshop was organized by the European supportive activity project COMeSafety (Communications for eSafety) and was supported by the US Department of Transportation, the Car2Car Communications Consortium, ITS UK, the Japanese Ministry for Land, Infrastructure and Transport (MLIT) and Ygomi.

The full-day workshop was divided into four panel discussions, each with a moderator and panellists from the three regions: Europe, Japan and the USA. At the beginning of each session a Global Overviewer highlighted remarkable points of the world's regions. Every panel discussion was followed by a controversial interactive discussion between the panellists and the audience.

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Frequency Allocation:

Good Progress: 5.9 GHz Frequency Spectrum for ITS

(by Soeren Hess and Dieter Seeberger)

The CEPT has agreed on the technical basis for the ITS frequency allocation in the 5.9 GHz band. Compatibility studies with other services have been finalised and officially adopted as ECC report 101. It is concluded that "the frequency band 5,855-5,925 MHz is compatible with all services with a restriction of the unwanted emissions below 5,850 MHz and above 5,925 MHz in order to protect services outside the required frequency band. Within the band 5,875-5,905 MHz ITS will not suffer from excessive interference resulting from other systems and services." The CEPT has also considered in detail the frequency requirements for ITS developments in the 5.9 GHz range and has concluded that 30 to 50 MHz is necessary for *Safety Related Applications* of which 20 MHz were needed for *Critical Road Safety Applications*.

With the results of the technical studies the status and protection of the ITS in the 5.9 GHz is now under consideration. Different options for regulatory instruments are considered. With the effective protection required in order to ensure the future development of ITS in Europe an ECC decision is necessary.

The first interim report in response to the EC Man-

date to the CEPT has been developed. The final report is expected by the end of the year 2007.

With the COMeSafety initiative the requirements for industry organisations are as follows:

- 50 MHz of harmonised spectrum must be made available for *Safety Related Applications* including *Critical Road Safety Applications*.
- Additionally 20 MHz should be made available for the *Non-Safety Applications*.
- The ITS should be considered as a Mobile Service and is compatible with other radio services in the band.
- The CEPT should adopt an ECC decision on spectrum for ITS as soon as possible.
- The European Commission should provide the necessary regulatory certainty for development of road safety systems and applications in Europe by an EC decision creating mandatory implementation of harmonised spectrum for ITS within the European Union.



The eSafety Forum held its 6th Plenary Meeting in Brussels on 8th Nov. 2006. Among a variety of specific ITS topics the eSafety Aware Platform was announced. The public-private partnership, founded in June 2006, will help to promote eSafety technologies with proven effect on road safety.

Interested readers will find the full documentation of this event on the website www.esafetysupport.org (eSafety Activities > eSafety Forum > Plenary Meetings).

On this occasion the eSafety Forum announced several new events in the year 2007:

- Mid March: eSafety Forum Plenary meeting in Brussels, along with GST final Workshop and Demonstration
- Mid-May (Probably 10-11): High Level Meeting with Industry in Rome, along with the launching of the "eSafety Aware Campaign"
- 13th or 14th September: eSafety Forum Plenary meeting in Versailles, along with the Prevent Demonstration and iCar events

Interesting links

- EU: CAR2CAR Communication Consortium <http://www.car-2-car.org>
- EU: eSafety Forum <http://www.esafetysupport.org/>
- EU: Europe's eSafety website http://europa.eu.int/information_society/activities/esafety/index_en.htm
- EU: Framework Programme 7—ICT <http://cordis.europa.eu/fp7/ict/>
- Japan: Advanced Cruise-Assist Highway System Research Association <http://www.ahsra.or.jp/>
- US: Department of Transport <http://www.its.dot.gov/vii>



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In August 2004, Smartway Project Advisory Committee, chaired by Dr. Toyoda Shoichiro, proudly declared that ITS entered the second stage in Japan. The rapid dissemination of car navigation systems, VICS (Vehicle Information Communication System) and ETC (Electric Toll Collection system) gives us the background on this declaration. The Committee also advocated the start of the following three ITS services in 2007:

- Smooth passage through all types of gates;
- Regional guides according to the location and needs of users; and
- Timely provision of driving support information.

The establishment of new targets has given a fresh impetus to the progress of ITS in Japan. In this article, the progress since the declaration of the Committee is described focusing a new ITS onboard unit and AHS (Advanced Cruise-assist Highway System) services. But, before taking up the main subject (see full article), I would like to

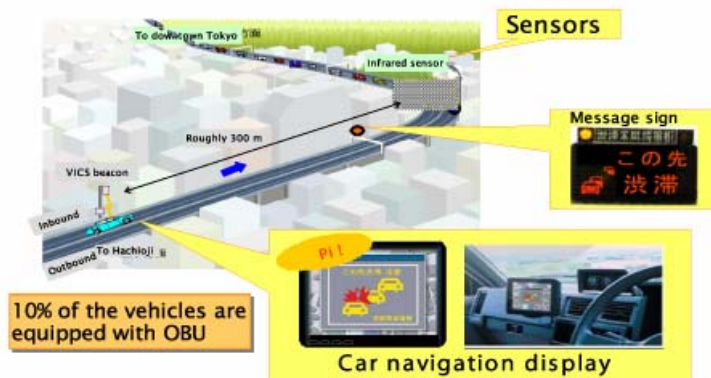
outline the recent situation of the dissemination of car navigation, VICS and ETC onboard units.

In response to a highly successful result in Sangubashi, noted for a black spot in Tokyo's Metropolitan Expressways, the extension of this system has been decided. The extension includes

held in Beijing in October 2007. And just after the World Congress in Beijing, a large scale demonstration is going to be held. The details of the demonstration are described on:

http://www.smartway2007.jp/index_e.htm.

We hope that many people will participate in the demonstration



the installation of a driving assistance system at some merging sections as well as the installation of a forward obstacle warning system at sharp curves other than Sangubashi. The details are now under discussion but some of the systems will be installed by the next ITS World Congress

and experience advanced driving assistance systems.

Read the full article on the COMeSafety website at www.comesafety.org (News > Ongoing Activities).

"Roads to the Future"
Field Operational Tests in the Netherlands



ERTICO Partner Dutch Ministry of Transport shows 8% reduction in accidents with intelligent vehicles.

A field operational test organised by the Dutch Ministry of Transport, Public Works and Water Management's "Roads to the Future" innovation programme has shown that the large-scale use of intelligent vehicles can cut accidents by up to 8%. "Roads to the Future" equipped vehicles with systems to maintain a safe speed and keep a safe distance (Adaptive Cruise Control - ACC) and prevent unintentional lane departures (Lane Departure Warning - LDW).

Improved driver behaviour

The test also showed that driver behaviour improves due to the use of these systems, which results in a smoother traffic flow. Other improvements to driver behaviour included:

- Less tailgating

- Less unintentional lane departures
- More equal distribution of speed
- Smoother acceleration
- Better use of indicators

Other results from the field operational test found that:

Driver assistance systems (direct support such as ACC and lane keeping systems) were rated higher by participants than driver warning systems (such as LDW and Headway Monitoring and Warning).

- Traffic flow improves as the number of accidents and the resulting congestion decreases.
- Fuel consumption decreases by 3% as a result of driving with ACC and LDW.
- Emissions decrease by up to 10%.
- The systems provide increased driver comfort.

"Roads to the Future" also investigated advanced driver assis-

tance systems in "The Assisted Driver" pilot. The focus was on how driving with these systems will change driver behaviour and ultimately affect traffic flows in terms of safety, efficiency and environment. Attention was also paid towards user acceptance and behaviour.

The tests are being used by the Ministry and other stakeholders to develop policy regarding advanced driver assistance systems. Results and data will also be used as input for European projects. In addition, "Roads to the Future" is willing to join the eSafety Forum to increase user awareness of these systems.

A presentation (in English) with more in-depth information can be downloaded from the Roads to the Future website:

www.wegennaardetoekomst.nl

For more information, please contact Jonna Brandsma (Tel +31 6 53 86 27 49)

Final Remarks by Timo Kosch, COMeSafety Coordinator

In his wrap-up Mr. Kosch raised several questions that should be discussed further. Among those were: How can safety and convenience functions be separated or supported by the same architecture? How many of the future ITS applications will be based on IP/Internet technologies?

For the discussion of cost models Mr. Kosch was considering public (or private operator) investment for the road-side infrastructure which might be used for private services on top of the priority safety and traffic services. For private use, charges might apply. Timo Kosch nevertheless regards the road-side infrastructure a public task, just like the existing one, be it signs, traffic lights or else. Safety related applications should be free of charge for the users.

Regarding Field Operational Tests there are a number of tests planned throughout Europe, Japan and the USA to prepare deployment. Simulation should be used in preparation and afterwards to be successful with FOTs. Sometimes, the distinction between an FOT and a "demonstration" does not seem clear. The terminology has occasionally been mixed up.

Some standards have already been published, like the IEEE 1609.2. Other standards are expected to follow soon. Additionally, he pointed out that no architecture should be based on one single standard. Rather, migration strategies for communication technologies are necessary.



Mr. Kosch reviewed at some of his statements, which he made at the beginning of the workshop, with respect to how they were discussed by the panellists. Basic technology was not that big issue anymore, he said and saw that verified by the discussions. The regions are fast moving towards deployment or they are already in the midst of it. Differentiation was needed between safety and convenience applications, and

rules for cooperative behaviour are required. This refers to standardization and regulatory issues. Mr. Kosch views IEEE 802.11p as a good basis that could be adopted in a foreseeable timeframe.

Nevertheless, there were some unclear points, says Timo Kosch at the end, which should be discussed intensely. Real impacts on safety and traffic are uncertain. Furthermore, we have to see how safety and convenience applications can coexist in one system.

Last but not least, Mr. Kosch announced the following 3rd International Workshop on Vehicle Communications, again in correlation with the ITS World Congress which is held 2007 in Beijing, China. Whether the workshop will take place near the ITS world congress venue or in addition to a major ITS demonstration in Tokyo will be discussed early in 2007.

Read more...

To find the full article with detailed information what's been discussed in the workshop sessions please visit the COMeSafety website (www.comesafety.org).

Project Fact Sheet

SAFESPOT—Cooperative Systems for Road Safety “Smart Vehicles on Smart Roads”



The SAFESPOT consortium, coordinated by Centro Ricerche Fiat includes 51 partners. Among

those are car makers, road operators, automotive, electronic road equipment and technology suppliers (forse meglio solo suppliers), and research institutes, that are working to design intelligent cooperative systems, based on vehicle to vehicle and vehicle to infrastructure communication, to produce a benefit for road safety.

SAFESPOT applications are conceived to enable the extension of the "Safety Margin" that is the time in which a potential accident is detected before it may occur:

- improving the range, quality and reliability of the safety-related information available to 'intelligent vehicles'
- supporting drivers preventively to the proper manoeuvres in the different contexts
- managing existing incidents to minimise further negative safety impact
- opening the development of new safety applications based on the cooperative approach.

SAFESPOT core activities are the development of an in-vehicle sensing and commu-

nication platform to generate safety messages from:

- vehicle dynamics and body networks
- on-board surrounding sensors
- passive safety systems
- global satellite-positioning



and an infrastructure-based sensing platform to provide high quality information via innovative low-cost and low energy road-side sensing systems (e.g. network of wireless sensors). The safety messages are exchanged with the other vehicles and with static roadside infrastructure.

SAFESPOT develops also the following enabling technologies:

- technologies for accurate relative positioning
- Innovative techniques to create and update local dynamic maps
- communication and networking technologies for vehicle-to-vehicle and vehicle-to-infrastructure communications.

SAFESPOT is committed to implement a local high speed ad hoc network as defined by C2C-CC. This network, based on the IEEE.802.11p protocol, will be shared by safety and mobility applications and is expected to be integrated with the CALM architecture. The integration in an overall architecture will enable also the use of different communication bearers for non safety-critical applications (e.g. DSRC, infrared, GSM, etc.).

SAFESPOT application scenarios are static and dynamic black spots (especially in urban, extra-urban and highway scenarios) to prevent accidents by increasing the SAFETY MARGIN for all vehicles detecting critical situation sufficiently in advance.

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The results of PReVENT WILLWARN (Wireless Local Danger Warning) were shown on a final workshop and demo, which was carried out at Böblingen on Nov. 15th. WILLWARN results were presented by slide presentations and a vehicle demo on a street network close to the DaimlerChrysler office in Böblingen. Visitors were the PReVENT Management team, the responsible EU officer Mrs. Holmberg, and other PReVENT Sub-project Leaders.



(marked by sign) where drivers switched their fog-lights on, a construction site area simulated by a road side unit, and a stretch of slippery road close to an earth dump, where drivers pushed a button. Each message contained the hazard type and a position trace. The position of the cars was compared always with the received traces and drivers were warned early by the WILLWARN HMI before they approached the hazardous spots. The test track was driven three times with the visitors. After each round the visitors could change the cars.

WILLWARN ended in January 2007, but the WILLWARN team contributes to the PReVENT exhibition in Versailles in September 2007, where a similar WILLWARN demo is shown.

WILLWARN partners: BMW, CNRS, DC, HTWForgis, NTUA, Philips, and TNO.

A road demo with 6 cars, an obstacle car, and a Road Side Unit showed the function of hazard warning dissemination by WLAN communication in a vehicle ad-hoc network.

The hazards were marked by an obstacle car standing close to the road with emergency flashers on, a foggy area

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Road Side Unit with construction site warning

CAR2CAR Communication Consortium: 1st Security Workshop November 2006



CAR 2 CAR

COMMUNICATION CONSORTIUM

The first open C2C CC Security Workshop took place on 16 Nov 2006 in Berlin. About 50 participants enjoyed interesting presentations and vivid discussions both in the plenary and in private conversations. The workshop was jointly organized by the C2C Communication Consortium Security Working Group, and the SEVECOM Project.

The workshop laid the foundation for follow-up workshops both open to the public and private C2C CC meetings.

Workshop Material

Workshop material will be made available publicly through the C2C CC website www.car-2-car.org.

Next Workshops

The next open C2C CC Security Workshop is expected to take place some time in Spring 2007.

COMeSafety, sponsored, in a joint effort with the C2C Communication Consortium, plans to hold a Simulation Workshop in Spring 2007. The event will most likely be located at the DLR site in Braunschweig. Information can be obtained from Karl-Oskar Proskawetz (proskawetz@gzvb.de)

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The COMeSafety Project Website Information

Don't forget to visit the COMeSafety website from time to time. You can find some of the newsletter stories of this edition in full length

there (www.comesafety.org). For comments please write to:
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