



Identifying ITS Opportunities for the HA ITS Research: December 2009

■ ITS RADAR INTERNATIONAL PROJECT

This project is providing intelligence for the Highways Agency on ITS developments in Europe and around the world. It is carried out by TRL and AECOM on behalf of the HA. The project summarises key information for decision makers and practitioners on activities related to Intelligent Transport Systems (ITS). The project covers specific areas of key interest to the HA.

Regular newsletters are being produced, covering information which is in the public domain. For more information about the project and the services provided, the web site can be reached at: www.highways.gov.uk/itsradar.

To contact us and let us know what you would like this project to deliver please email us at: ITSRadarInternational@trl.co.uk

■ ABOUT ITS RESEARCH

The research projects covered in the European Research newsletters are mainly those which receive funding from the European Commission, through programmes such as the Seventh Framework Programme, EasyWay (implementing ITS on the Trans-European Network) and the e-Safety initiative. Updates on European ITS research projects aim to inform the Highways Agency about project progress and notify when significant milestones and deliverables are achieved. News of newly launched and forthcoming ITS projects are reported to keep the HA up to date with the latest research being carried out in Europe.

■ MEETINGS

Cooperative mobility conference 2010 – I&C Drive

Source: icdrive.eu

The event will take place in Amsterdam over 23 to 26 March 2010 and will consist of a conference, a live demonstration and an exhibition.

During the conference executives and experts of the CVIS, SAFESPOT and COOPERS projects will present the final results available following four years of development, testing and validation. The programme will also address the challenge of deploying cooperative systems, with high-profile speakers from Europe and around the globe. An accompanying programme of short courses will explain how cooperative systems work, and how to implement them.

During the live demonstration delegates will have the unique opportunity to experience the latest techniques and developments in vehicle-to-vehicle and vehicle-to-infrastructure communication. The demo drive will take delegates on a track in the RAI grounds as well as out on the nearby motorways and city roads, to demonstrate tomorrow's cooperative applications for drivers. The demonstrations will highlight the positive impacts for the environment, safety, mobility and individual travellers.

For more information and to register your interest, see the [event announcement flyer](#).

■ CALLS FOR PROPOSALS

European Commission Call for Proposals on Information and Communications Technologies - Call 6 now open

Source: UK FP7 Contact Point

The European Commission has issued a call for research proposals on Information and Communications Technologies.

Under Challenge 6: 'ICT for Mobility, Environmental Sustainability and Energy Efficiency', the work programme includes topics under Objective 6.2 (ICT for Mobility of the Future) which are relevant to the Highways Agency:

- Field Operational Tests for Integrated Safety Systems and Cooperative Systems to assess improvements in efficiency and safety of autonomous and cooperative vehicle systems – includes:
 - Large scale test programmes aimed at “comprehensive assessment of the efficiency, quality, robustness and user-friendliness of close to market systems, before their full scale deployment in Europe”
 - Where needed, performance evaluation of safety-related cooperative systems in controlled proving ground environments.
- ICT based systems and services for Smart Urban Mobility and New Mobility Concepts – includes:
 - Innovative new tools, services and methods for demand management
 - ICT for replacing mobility.
- Coordination and support actions under the framework of the Intelligent Car Initiative
- International cooperation with Japan and the USA to establish mechanism for mutual validation and exploitation of programme results.

The budget for Objective 6.2 is €37m. Proposals are to be submitted by 13th April 2010.

Slides relevant to this part of the programme can be found at the [FP7UK ICT Library](#).

The information pack for this call and details required for submitting proposals are available from the [CORDIS web site](#) (click on the '+' adjacent to 'Information Package').

HA recommended to investigate opportunities for participation

■ HOT TOPICS

EU and U.S. signed a joint Declaration of Intent on research cooperation in cooperative systems

Source: [Europa](#)

The European Commission Information Society and Media Directorate-General (EC/DGINFSO) and the Research and Innovative Technology Administration of the United States Department of Transportation (USDOT/RITA) have signed a Declaration of Intent on research cooperation in cooperative systems. The agreement builds on the Implementing Arrangement regarding cooperative activities in the field of Information and Communication Technologies (ICT) research applied to road transport that was signed by the U.S. and EU in January 2009.

The joint declaration states:

"Based on the V2V and V2I Research Plans, developed under the IntelliDrive Initiative in the U.S., and the Technical Road Map for development of Cooperative Systems, developed by a Task Force of the EC/DGINFSO, the parties intend to identify the research areas which would benefit from a harmonised approach and which should be addressed by coordinated or joint research.

The parties further intend to support research in cooperative systems in a manner which is compatible with this harmonised approach and avoids duplication of efforts. This work may be supported by a Strategic Research Agenda, where joint research areas are identified."

ITS Radar International will continue to monitor EU – US cooperation in ITS

SARTRE - automated road train development

Source: [BBC News](#), Professional Engineering, 4 November 2009, p43

An EU-financed research project – SARTRE (Safe Road Trains for the Environment) is looking at possible ways of creating road trains on European roads. These trains would consist of up to eight vehicles of different types being led by a single lead vehicle.

The lead vehicle would be driven by a professional driver who would monitor other vehicles in the convoy. Each vehicle in the convoy would be controlled by the lead vehicle through ITS and cooperative vehicle to vehicle (V2V) systems. The aim is to make these platoons active so that vehicles can join and leave at any time. While the vehicles are in the platoon, their drivers would not need to drive.

Funded under the European Commission's 7th Framework Research Programme, SARTRE is aimed at commuters in cars who travel long distances

to work every day but will also look at ways to involve commercial vehicles. The EU hopes that road trains will deliver several benefits including:

- Improved traffic flow;
- Reduced journey times;
- Reduced number of accidents;
- Improved fuel consumption;
- Reduced CO2 emissions, and
- Greater comfort for drivers.

The SARTRE project will run for three years, with trials expected to be held on test tracks in the UK, Spain and Sweden towards the end of the project.

There are also plans for public road trials in Spain.

The project partners are currently doing preliminary research to find out all the elements needed for a working system and the situations in which it might be used.

More information on the project can be found on the [RICARDO web site](#) and the [Green Car Congress](#) .

Highlights from the second international workshop on Field Operational Testing

Source: [ERTICO](#)

Held during the 16th ITS World Congress in Stockholm, the aim of the event was to contribute to the establishment of a global Field Operational Testing (FOT) network in order to exchange knowledge and best practice, and foster cooperation for FOT activities.

Results were presented from the Collision Avoidance System trials held in the Netherlands. During the large-scale FOT, several collision avoidance systems for trucks were trialled. The objectives of these systems were to reduce the number of accidents involving trucks, to gain insight in their effect on traffic flows and to test their effectiveness.

The trials lasted for eight months, and involved 2,400 lorries with different systems being monitored and all the data being recorded. The systems tested during the trial were:

- Headway Monitoring & Warning (HMW) and Forward Collision Warning (FCW)
- Lane Departure Warning Assist (LDWA)
- Adaptive Cruise Control (ACC)
- Directional Control (DC)
- Black Box Feed Back (BBFB).

The study showed that the various systems reduce the risks of accidents, with the most important indicators being:

- Longer following times between vehicles
- Reduced risk of tipping
- Fewer unintentional line crossings as vehicles drift out of their lanes

- Driving at a more regular speed.

Presentations given during the workshop can be found on [FOT Net](#). These presentations included:

- FOT accomplishments and challenges in Europe, Japan and US
- Methodology and data handling
- Examples of international FOT cooperation.

HA recommended to view the presentations

■ PROJECTS

SIMBA II EU-China Workshop highlights

Source: [ERTICO](#)

The EU-China Workshop was held on 26 October 2009 in Beijing, co-organised by ERTICO, coordinator of the SIMBA II project, and China National Intelligent Transport Systems Centre of Engineering and Technology (ITSC), who is responsible for coordinating SIMBA II activities in China.

The workshop gathered key stakeholders in the field of Intelligent Transport Systems and Services from China and Europe with the aim of discussing cooperation between China and EU in the research and development of ITS technologies and services. The outcomes from the discussions will be used to form R&D agenda for the European Commission.

The main areas that were identified where cooperation between EU and China can be beneficial were:

- Road safety
- Pollution
- Vehicle electrification
- ITS service provision
- Sustainable transport planning.

Presentations on these areas from the workshop are available on the [SIMBA II project website](#).

ITS Radar International will continue to monitor SIMBA

Cooperative vehicle highway systems – news from the ITS World Congress in Stockholm, September 2009

Source: HA CVIS project

The 2009 ITS World Congress included many presentations on cooperative vehicle technologies. These technologies can be used to improve road safety, traveller information and network management. Highlights from some of the sessions which were of particular relevance to the Highways Agency have been provided by the Highways Agency's members of the CVIS (Cooperative Vehicle Infrastructure Systems) project team.

A Special Interest Session on Cooperative Vehicle Highway Systems (CVHS) included:

- The World Road Association (PIARC) and the International Society of Automobile Engineers Joint Task Force. This aims to inform road operators and national road authorities about developments in Cooperative Vehicle Highway Systems (CVHS) in the UK and IntelliDrive in the USA, and to help accelerate deployment by recommending good practice. A report is being prepared which will cover recent developments around the world, deployment issues, roles and responsibilities, common interfaces and open standards and legal and regulatory issues.
- Driver Safety Support Systems (DSSS) in Japan. This includes collision prevention, stop sign warning, signal recognition, warnings for rear end collisions and queues. A large scale trial is under way, involving over 1,000 vehicles.
- Advanced Safety Vehicle (ASV) in Japan. This project began in 1991 and has now reached the stage where the benefits of driver assistance systems are being promoted in a 'popularisation' programme using driving simulators and guidebooks, to improve take-up, currently focusing on collision avoidance in Heavy Goods Vehicles. A demonstration took place early in 2009 (see ITS Radar International article, May 2009).
- The discussion focused on the role of road authorities and what will happen if they do nothing. It was suggested that systems based on vehicle-to-vehicle communication will develop anyway, and cars would become more autonomous (and costly) with benefits to individual users, but that this would not provide benefits to society as a whole; the return on investment would be greater if investment in infrastructure enabled vehicle-to-infrastructure communications systems to be deployed.

An Executive Session: 'Towards a Common Approach to Cooperative Systems' included:

- A speaker from Japan who stated that it is expected that vehicle-to-vehicle communications will be widespread in Japan within the next five years if the Advanced Safety Vehicle 'popularisation' programme and accompanying incentives are successful.
- A speaker from the US discussed the 'IntelliDrive' programme. The applications which are being considered for early adoption are the ones based on cellular radio and Dedicated Short Range Communications (DSRC); deployment of infrastructure-based applications does not appear to be likely in the near future as these are in the early stages of development.

A Special Interest Session; 'Towards safer, cleaner and smarter mobility with cooperative systems' included:

- Presentations on some of the European Projects in this area (for more details of these projects see the ITS Radar International CVHS Fact Sheet).
- A presentation on deployment scenarios for cooperative systems. The benefits of cooperative systems were seen for users (safety,

information, lower costs), network operators (more efficiency), society (fewer accidents and lower emissions), and industry (new markets). To realise the full benefits it was suggested that a practical system would require a beacon along every 2km of motorway, which amounts to 50,000 beacons across Europe; currently there is no obvious business case for this level of investment. The following path to deployment was envisaged:

- Enhanced common applications (such as alerts, driver assistance and real time traffic and event information), with key feature being multi-channel communications with seamless handover on the move and roaming
- Infrastructure beacons broadcasting local information to vehicles (I2V) – e.g. mimicking road signs and providing other data such as temporary speed limits
- Using vehicle to infrastructure communications (V2I), road operators can obtain anonymous data - such as journey time - to assist with traffic management (e.g. early detection of incidents and congestion) and provide information to vehicles (I2V)
- Value Added Services transmitted to vehicles via beacons (I2V) (e.g. local data and traffic data).

Copies of the presentations at the Special Interest Sessions and Executive Sessions are available to congress delegates. HA staff should contact: ben.catchesides@highways.gsi.gov.uk. For more information on papers at the ITS World Congress which are of relevance to the HA, see the ITS Radar International index of papers on the [ITS Radar International web site](#).

Highways Agency contact for more information on the CVIS project: graham.seaton@highways.gsi.gov.uk.

Cooperative vehicle highway systems – demonstrations at the ITS World Congress in Stockholm, September 2009

Source: HA CVIS project

The 2009 ITS World Congress included a number of demonstrations of cooperative vehicle technologies on public roads. Highlights from the CVIS project demonstration have been provided by the Highways Agency's members of the CVIS (Cooperative Vehicle Infrastructure Systems) project team.

CVIS demonstrated 10 applications, including:

- Communications technology: seamless handover between a variety of communication channels based on CALM standards (Communications Architecture for Land Mobiles)
- Open service platform for service provision: enabling smooth and automatic downloading of applications while the vehicle is in use
- Positioning technology: enhanced positioning supports more efficient use of the road network using lane matching for example dynamic use of the hard shoulder, or flexible use of a bus lane

- Road charging: free flow tolling, with services from a variety of operators available simultaneously (e.g. for different regions)
- Travel information: provision of parking and public transport information to support multi-modal journeys
- Access control: access control rules prohibit access to an area (e.g. tunnels, bridges, low emission zones) by vehicles of specific characteristics (e.g. HGVs, dangerous goods) and drivers are provided with directions for an alternative route
- Enhanced driver awareness: car to car communications warn drivers in the vicinity of vehicles driving in the wrong direction, and provide information to the traffic centre which then warns vehicles approaching the area
- Dynamic safety warnings: safety information provided to the vehicle can alert the driver for example on approach to a dangerous junction or in the vicinity of schools at the start and end of the school day.

These applications had been developed in five different countries and demonstrated that open interoperable applications can be successfully written for a common hardware platform.

Highways Agency contact for more information on the CVIS project:
graham.seaton@highways.gsi.gov.uk

ITS Radar International will continue to report on the CVIS project

■ RECENT PUBLICATIONS

No new recent publications to report on

■ GLOSSARY

ACC	Adaptive Cruise Control
ASV	Advanced Safety Vehicle
BBFB	Black Box Feed Back
CALM	Communications Architecture for Land Mobiles
CVHS	Cooperative Vehicle Highway Systems
CVIS	Cooperative Vehicle Infrastructure Systems
DC	Directional Control
DGINFSO	The European Commission Information Society and Media Directorate-General
DSSS	Driver Safety Support Systems
FCW	Forward Collision Warning
FOT	Field Operational Test
HMW	Headway Monitoring & Warning
I2V	Infrastructure to Vehicle communication
ICT	Information and Communication Technologies

ITSC	The China National Intelligent Transport Systems Centre of Engineering and Technology
LDWA	Lane Departure Warning Assist
PIARC	The World Road Association
RITA	Research and Innovative Technology Administration (U.S.)
USDOT	The United States Department of Transportation
V2I	Vehicle to Infrastructure communication
V2V	Vehicle to Vehicle communication