



Identifying ITS Opportunities for the HA Technologies Newsletter: February 2010

■ 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 TECHNOLOGIES

Intelligence on developments in new and emerging technologies relevant to ITS are reported on. Technologies deployed in various other arenas are reviewed and their applicability in the world of transport is analysed.

Intelligence is gathered which demonstrates links between promising pilots, ideas and concepts and deployed ITS tools. This service enables earlier consideration of new technologies and in addition identifies cases where consideration has been given to new ideas, but may be held in abeyance due to the associated 'risks'.

■ GUEST AUTHORS

To involve readers more in the ITS International Service, staff in the HA and its supply chain are encouraged to contribute articles for publication in the newsletters. This month, the articles about the HA Technology Guide and the HA Traffic Camera Service have been provided by WSP.

■ MEETINGS

3rd IEEE International Symposium on Wireless Vehicular Communications 2010 (IEEE WiVeC) 16 – 17 May 2010

Source: www.ieeevtc.org

The third IEEE International Symposium on Wireless Vehicular Communications 2010 (WiVeC'2010) will take place at the Grand Hotel in Taipei on the 16th and 17th of May 2010. This will be co-located with the IEEE Vehicular Technology Conference 2010. The focus of IEEE WiVec will be on vehicular wireless communications aspects such as:

- Vehicle-to-Vehicle (V2V)
- Vehicle-to-Infrastructure (V2I)
- Vehicle-to-Person (V2P)
- communications with regard to impact on transport efficiency and safety, automotive electronic implications
- standardisation issues and liability concerns
- spectrum alignment.

HA recommended to consider attending

ITS Radar International will monitor the outcome of the symposium

Keywords: Communications, Cooperative Vehicle Systems, Training

'Wireless Communications to Enable the Internet of Things' Conference 11 March 2010

Source: www.wisig.org

The "Wireless Communications to Enable the Internet of Things" conference will take place in conjunction with the 9th the Wireless Sensing and Interest Group (WiSIG) Meeting on 11th March 2010 at the University of Surrey. During the event the latest radio access technologies will be discussed and analysed, with a view to connecting everyday objects and devices to databases and the Internet in accordance with the concept of an "Internet of Things". Organised by the University of Surrey, the conference will feature presentations and reports both from researchers and practitioners.

ITS Radar International will monitor the outcome of the conference

Keywords: Communications, Training

24th ARRB Conference on road and transport research October 2010

Source: www.conferenceworks.net.au

The 24th Australian Road Research Board (ARRB) Conference 'Building on 50 years of road and transport research' will be held in Melbourne in October 2010. The conference will involve presentations of papers and discussions about:

- congestion, freight and productivity

- safe systems
- infrastructure management
- sustainable infrastructure sciences and technology.

ITS Radar International will monitor the outcome

Keywords: Environment, Freight, Safety, Traffic management, Training

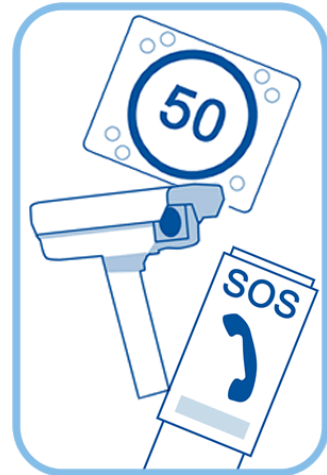
■ HOT TOPICS

The HA Technology Guide - Sharing knowledge for mutual benefit

Source: WSP on behalf of the Highways Agency

The Technology Guide is a web based system (www.ha-partnernet.org.uk/techguide) owned and maintained by the Highways Agency, which contains articles regarding a wide variety of traffic technologies already used to manage the network, and technologies currently being trialled, and researched on HA projects.

Technology Guide articles are regularly updated with the latest information on new and existing projects, and at the same time new enhancements are being made to the website to improve the service offered.



Your Technology Guide needs YOU!

Each article on the Technology Guide needs a page owner. Updates to the existing content, as well the addition of new content, are managed by the Technology Guide team, but we need page owners to keep us informed of the latest developments, which are changing all the time.

Page owners may come from a variety of backgrounds including the Highways Agency, consultants and maintenance contractors.

If you find any content that requires updating, have any new information that should be included, or if you require any other help accessing the Technology Guide, contact the Technology Guide Team.

New and Forthcoming Articles

The Technology Guide Team would like to announce the publication of the following articles:

- Managed Motorways
- Stock Management System Implementation Project
- Technology Guide User Trials

Other articles currently in development include:

- Motorway Lighting
- CCTV Network Integration Project (CNIP)
- Intelligent Motorway Lighting

Finding the Guide

You can find the HA Technology Guide by visiting <http://www.ha-partnernet.org.uk/techguide>

Or for further information please contact: Kathryn Robinson (Highways Agency) kathryn.robinson@highways.gsi.gov.uk or Adrian Hull (Highways Agency) adrian.hull@highways.gsi.gov.uk

Email: technology.guide@highways.gsi.gov.uk

Keywords: Training

SARTRE project update. Autonomous vehicles breaking the rules?

Source: 'There to be broken?' Vision Zero International, January 2010, pg. 34-37 and [Thinking Highways](#)

Autonomous driving could become a reality as soon as the end of the next decade. Imagine you join a convoy of cars and are able to relax while your car is driven automatically by the SARTRE system.

The project team anticipate that commuters who make long motorway journeys would benefit most, but that the system would also be useful for buses, coaches, lorries and other commercial vehicles. Each convoy would be led by an experienced driver who is familiar with the route. Vehicle navigation systems would be used to link vehicles to the convoy and then autonomous driving would take over. On approaching the final destination, vehicles would each disconnect and continue to drive as usual to their separate destinations.

The SARTRE team believe that such technology could improve traffic flow, reduce journey times, increase road safety and reduce fuel consumption due to the lower air drag associated with vehicles travelling in convoy. However, the Vienna Convention from 1968, which says "that a driver must remain in control of a vehicle at all times", may restrict implementation.

ITS Radar International will continue to monitor SARTRE

Keywords: Cooperative vehicle systems, Environment, In-vehicle systems, Policy, Project, Safety

Mexico City gets first RDS-TMC service

Source: www.itsinternational.com

Clear Channel Radio's Total Traffic Network (CCTN) in cooperation with Grupo Acir launched the first RDS-TMC service in Mexico City. Users can now receive up to date traffic information via FM radio on TMC enabled devices. CCTN announced that they are planning to roll out an RDS-TMC navigational service in other Mexican cities in the near future.

Keywords: Communications, Geographic information

Highways Agency Traffic Cameras Service

Source: WSP on behalf of the Highways Agency

The Highways Agency (HA) is responsible for the construction, maintenance and operation of England's strategic road network. This network comprises

7,754km of motorway and major trunk roads, carrying a third of the country's road traffic and two thirds of all heavy freight traffic, which in places can lead to heavy congestion.

The HA continually looks at ways to improve the way its strategic objectives (Safe roads, Reliable journeys, Informed travellers) are met, often utilising innovative technical solutions to achieve its operational goals. Closed Circuit Television (CCTV) is widely used throughout the network and is seen as a beneficial tool and key to the continued improvement of monitoring and managing the network on a day-to-day basis.

The Traffic Cameras Service (TCS) provides key stakeholders and the public with access to CCTV camera images. The service is the largest of its kind in the world comprising of more than 1400 cameras and has been developed using a number of innovative approaches including design, delivery and partnering to achieve its objectives.

TCS plays a key role in providing customer focused traffic information services and its primary objective is to improve journey time reliability on England's strategic road network by providing up-to-the-minute images of traffic conditions via either the 'still images' or the 'media streaming' service. Each service focuses on different target user groups and is tailored to meet their specific requirements.

Still images are available to both operational users via a restricted website, the Highways Agency Network Viewer (HANET), as well as the general public via the Agency's own Traffic England website.

An innovative partnering approach with media organisations and web hosts has been fostered and implemented, allowing nominated third parties or 'media partners' to access and disseminate still and live images to the public through their own traffic news bulletins and websites. For example, still images are now available on the BBC's dedicated travel pages and streaming images have been made available to broadcasters such as the BBC News and Channel M for edited use in televised travel bulletins. This greatly assists the HA in reaching a far wider audience and supports the growth and public confidence in the Traffic Information industry.

Sharing of HA CCTV images with media partners was made possible by the introduction of the Video Information Highway (VIH) which defines the policy and methods for dissemination of images to third parties in a safe and secure way so that images of a potentially distressing nature are not broadcast to the public. It is this combining of innovative technology, VIH policy and the HA's willingness to share its images that has made the TCS so successful.

The TCS has generated positive feedback from users and plays a key role in the HA's goal to provide road users with improved information. The service has allowed for improvements in maintaining the network and journey planning and consequently has facilitated the process of easing congestion.

For further information about the Traffic Cameras Service, please contact David Weston on 0121 352 4753 or via email: david.weston@wspgroup.com

Key words: Communications, Incident, Monitoring, Traffic information

■ PROJECTS

Hard shoulder running now active on the M6 near Birmingham

Source: 'Hard choice about to make life easier for drivers on M6', Surveyor, 4 December 2009, pg. 5 and www.highways.gov.uk

The hard shoulder is now used as a running lane during busy periods on a stretch of the M6 near Birmingham. The scheme was completed as part of a £150m contract to improve the safety and reliability of journeys.

Transport minister, Chris Mole announced that by 2015 an extra £3bn is planned to be invested to gain an additional 340 lane miles through similar managed motorway schemes.

Keywords: Traffic management

■ RECENT PUBLICATIONS

US to use hard shoulder running with automatic video incident detection

Source: 'Shouldering the burden...', Thinking Highways, Vol. 4, Issue 4, Nov/Dec 2009, pg. 60-62

The annual cost of traffic jams in the United States was estimated at US\$78billion in 2005 by the Texas Transportation Institute. Hard shoulder running is an effective solution to ease congestion, however it needs to be safe and hence monitored at all times. Video-based incident detection is recognised as the most financially beneficial solution for hard shoulder monitoring. Video detection works well with CCTV technology and is the only system that highlights events, analyses them in real time and provides visual representation. This enables quicker and more accurate detection, minimising incidents and congestion.

Keywords: Incident, Monitoring, Traffic management

Joint task force formed to deliver Cooperative Highways

Source: 'It takes two', Traffic Technology International, January 2010, pg. 14-19

Car manufacturers have to cooperate with road operators if Cooperative Vehicle Highway Systems (CVHS) are to continue to be successfully deployed. CVHS technology allows for reception of a traffic light signal and automatic calculation of the speed which a car should adopt to avoid stopping, acceleration or deceleration. Therefore, it is important to be able to convince public authorities of their effectiveness and to demonstrate how authorities can justify investment in such systems.

To improve cooperation between road network authorities and CVHS manufacturers, Richard Harris from Logica formed a Joint Task Force made of PIARC (World Road Association) and FISITA (the world body for automotive engineering). The Joint Task Force is aimed at informing road operators about CVHS and assisting them in its deployment.

ITS Radar International will monitor the work of the Task Force

Keywords: Cooperative vehicle systems

Developments in Variable Message Signs

Source: 'Lead the way', Traffic Technology International, January 2010, pg. 28-31

Variable Message Signs (VMS) are useful tools to convey information or warning messages about traffic flow, incidents, enforcement or the location of car parks and their available capacity. Full-colour, graphical VMS can display high-resolution symbols, photos or any other representation a designer may wish and, properly designed, can improve driver reaction. Nevertheless, steps should be taken to minimise the distraction evoked by these signs.

Daktronics introduced the Dedicated Dynamic Message Sign (DDMS) to the US market in 2009 which they claim can convey travel times and toll/congestion pricing in a cost-effective way. However, there is an increasing demand to use its full-colour capabilities to display full-colour signage and even add logos for event management.

Keywords: Enforcement, Incident, Monitoring, Payment, Traffic information, Traffic Management

'At the helm' - article on the future of traffic management and cooperative systems

Source: Intertraffic World (Issue 1, p.50)

In this article Frans op de Beek, a senior ITS consultant in the Netherlands, discusses the future of ITS and co-operative systems in transport and how policy can aid and guide their development.

Increased usage of smartphones will in future enable a typical user to both receive real-time information, and collect and distribute it from the phone. Intelligent vehicles and infrastructure are now being developed and by 2030, are expected to be with us. Vehicles and road infrastructure will benefit from more, newer Information and Communication Technologies (ICT), allowing for the communication between intelligent vehicles, as well as intelligent vehicle and the intelligent road.

The Dutch Ministry of Transport's policy framework defines four areas for influencing traffic by:

- Inform (e.g. travel times, weather , road works)
- Warn and advise (e.g. traffic conditions, speeds, routes)
- Guide and instruct (e.g. lane change, safety)
- Intervene (e.g. lane departure warning assistance).

These areas apply to the four major "actors" in the transport system: User/Driver, Intelligent infrastructure, Intelligent vehicles, Network

manager/operator. At the moment, a strong link exists only between two of those, the User and the Network operator. The goal of a co-operative system should be to establish clear links between all four parties that work together to inform, warn and advise, guide and instruct, and intervene if necessary.

By 2030 all four major parties should have clear links between each other; this will enable each one of them to take on the leading role during different parts of a journey and depending on the situation. However, in order for this to happen, organisational, commercial and technical architecture needs to be put in place that will guide the development and implementation of such co-operative systems.

Key words: Communications, Cooperative vehicle systems, Policy, Traffic information

AA online Route Optimiser helps HGVs avoid height and weight restrictions

Source: www.teleatlas.com; www.itsinternational.com

The AA and partners have jointly developed a new online software product called Route Optimiser for individual delivery vehicles to large HGV fleets. Route Optimiser is route planning software which determines the safest and most efficient routes for a fleet, taking into account height and weight restrictions and real-time traffic conditions. It optimises fuel use and time and is claimed to reduce carbon emissions from a fleet by up to 30%.

Keywords: Environment, Freight, Geographic information, In-vehicle systems

Exploiting advances in ANPR technology

Source: 'Tech tonics', ITS International, November/December 2009, pg. 31-34

This article discusses the future of the Automatic Number Plate Recognition (ANPR) market. The market size is predicted to increase by 25-30 per cent in the next five years. More cameras will use built-in Digital Signal Processing (DSPs) to benefit from video analytics and reduce ANPR's motion blur, as well as improve smart exposure control, skew correction and vehicle detection.

It is predicted that as well as being able to capture number plate details within the unit, the cameras themselves will soon be able to classify vehicles according to their type and colour. These types of developments in miniaturisation and improvements in number plate identification accuracy will result in the appearance of new systems and applications.

Keywords: Communications, Enforcement, Identification

■ GLOSSARY

AA	Automobile Association: UK motoring organisation
ANPR	Automatic Number Plate Recognition
ARRB	Australian Road Research Board
CCTN	Clear Channel Radio's Total Traffic Network
CCTV	Close Circuit Television

CVHS	Cooperative Vehicle Highway Systems
DDMS	Dedicated Dynamic Message Sign
FISITA	the world body for automotive engineering
HANET	Highways Agency Network Viewer
ICT	Information and Communication Technologies
PIARC	World Road Association
RDS-TMC	Radio Data System – Traffic Management Channel
TCS	Traffic Camera Service
VIH	Video Information Highway
WiSIG	Wireless Sensing and Interest Group
VMS	Variable Message Signs