



Identifying ITS Opportunities for the HA Technologies Newsletter: July 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:

<http://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 TECHNOLOGY

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'.

■ MEETINGS

None to report

■ PROJECTS

None to report

■ NEWS

Providing telematics services in BMWs in Europe

Source: Thinking Highways

BMW has appointed WirelessCar as the Telematics Service Provider for their vehicles in Europe. The service aims to connect all newly produced vehicles in Europe from June 2010. The service will be available on all models for a period of up to four years.

Basic services will include:

- Automatic and manual emergency call
- Breakdown or roadside assistance call
- Up-to-date traffic information
- A wide range of operator services providing information on the local area
- Ability to send geo-coded information to the car, e.g. Point Of Interest (POI) information

WirelessCar is a branded entity within Volvo IT. It serves as the Telematics Service Provider for the Volvo group as well as external customers.

Keywords: Communications, Emergency, In-vehicle systems, Safety, Traffic information

WirelessCar has been selected to provide a range of new telematics services in all new BMW cars in Europe from June 2010.

Speed enforcement: all for one, one for all

Source: [Thinking Highways](#)

The need for enforcement of speed control systems such as those deployed in managed motorway schemes is driving the development of Automatic Number Plate Recognition (ANPR) technology (often referred to as Automatic Licence-Plate Recognition, ALPR). There is an increasing need for 'all-in-one' ANPR units that can illuminate the road and capture and process number plate images in one compact unit. They also need to be 'one-for-all', in other words be capable of analysing information from all types of vehicles, including those with foreign plates travelling at motorway speeds.

Key words: Enforcement, Safety

To enforce speed control systems, there is an increasing need for 'all-in-one' Automatic Number Plate Recognition units that can illuminate the road and capture and process number plate images in one compact unit.

Bridging the gap – ITS in South Africa

Source: [Thinking Highways](#)

As part of its drive to improve transport before the 2010 football world cup, ITS South Africa has established the ITS Centre of Excellence (ITS CoE). The ITS CoE is a virtual organisation and is a delivery mechanism for ITS in South Africa. The objectives of the centre are, among others, to find ways to deliver

strategic ITS projects, to encourage skill development and training and form relationships with international organisations. ITS CoE will stand on five 'pillars': knowledge management, skills development, education, research support and innovation and development.

Key words: Training

As part of its drive to improve transport before the 2010 football world cup, ITS South Africa has established a virtual ITS Centre of Excellence. One of its objectives is to form relationships with international organisations.

The move to IP for transmitting images

Source: [*ITS International*](#)

Analogue CCTV cameras are gradually being replaced by digital video cameras which use IP (Internet Protocol) to send image data over a network. There are many benefits of digital technology over traditional analogue CCTV for traffic surveillance. Digital images can be sent over low-bandwidth connections, much like analogue. Unlike analogue, digital cameras offer the flexibility of reducing the frame rate to improve overall clarity without causing motion blur.

CCTV cameras are increasingly being used in automatic incident detection systems. Older systems required a good (and expensive) connection to feed the video back to a control centre for image processing. Digital IP video cameras are beginning to offer image processing within the device itself.

Future developments envisaged include better image quality, enhanced video analytic tools and more flexible communication infrastructure.

Key words: Enforcement, Incident, Monitoring, Traffic management

This article discusses the benefits of digital CCTV for traffic surveillance and automatic incident detection and outlines some of the future developments which are envisaged.

The next landmark in vision technologies

Source: *Engineering and Technology*, 9-22 May 2009, pg. 40-42

The vision industry has benefited from the latest 3D image processing technology. Processing power has improved greatly in recent years and laser and camera systems have become more accurate and significantly cheaper.

Early vision systems were constrained to production lines where conditions were always near perfect. Measurements were only made in two dimensions and the orientation of the objects they were checking had to be the same. Increased processing power has meant vision systems can now undertake high resolution 3D measurements and adjust for different types of objects in different orientations. These systems are starting to make their way out of the controlled environment of factory production lines and into the much more complex real world.

The improvements in vision systems mean they now have the potential to monitor traffic movements to perform functions such as incident detection, speed monitoring, classified counts, turning movement counts and moving traffic violations.

Key words: Enforcement, Monitoring

This article discusses progress in vision systems which have advanced from devices for monitoring for simple defects in the controlled environment of a factory production line, to systems that have the potential to undertake a wide range of traffic monitoring functions.

Calculating origin-destination data from vehicle number plate readings

Source: Traffic Engineering & Control, May 2009, pg. 234-236

Automatic Number Plate Recognition (ANPR) cameras are now fairly common, but they are usually used for strategic traffic monitoring or enforcement purposes. One potential new application is for gathering origin-destination data for traffic models that has been impractical or impossible to collect in the past. ANPR data, combined with data from loop sites, would allow models to use up-to-date traffic patterns for large areas of the country rather than relying on patchy data and infilling with other models. Such data would be more reliable and could be used for validation of travel patterns and journey times for different locations.

Key words: Enforcement, Monitoring, Traffic management

A potential new application of Automatic Number Plate Recognition cameras is for gathering origin-destination data for traffic models, which would be more reliable than current methods of data gathering.

Smoothie traffic in the Garden of England

Source: Traffic Engineering & Control, May 2009, pg. 225-227

Kent Highways Services partnership is increasing the number of ITS-centric schemes, and they are using a UTMC common database as the core. Kent's recently opened Traffic Management Centre (TMC) in Maidstone currently covers Maidstone itself, but is being expanded to manage traffic in more towns.

Within Maidstone, the UTMC (Urban Traffic Management Control) common database controls traffic signals and is used to monitor journey times from data obtained from ANPR (Automatic Number Plate Recognition) cameras. CCTV and VMS will soon be added and the system will be expanded to include Canterbury, Dartford and Gravesend.

The UTMC common database is also expected to be connected to Highways Agency systems for co-ordinated control of the A2, M25 and A282 via the Regional Control Centre (RCC).

Key words: Monitoring, Traffic information, Traffic management

Kent Highways Services partnership is expanding the ITS services based around its new traffic management centre. A link is planned with the Highways Agency for co-ordinated control of routes via the Regional Control Centre.

Speedy measures for surveying highway assets

Source: Surveyor, 21 May 2009, pg. 16-17

Routemapper is a service being offered by IBI for surveying assets on and beside the highway. A van, travelling at full highway speeds is equipped with high accuracy GPS and multiple video cameras (which measure items in two or three dimensions). An operator sitting in the passenger seat uses a touch-screen interface to monitor and log highway assets in real time. All the recorded information can be played back from a desktop application at a later date and multiple images and grid locations of all tagged assets can be viewed.

HA recommended to investigate

Key words: [Asset management](#), [Geographic information](#), [Monitoring](#)

A new service has been developed that will enable data collection for asset management purposes to take place at full highway speeds, logging the data collected in real time.

West Yorkshire re-writes the rules for speed camera site selection

Source: Local Transport Today, 8 - 21 May 2009, pg. 7

The Department for Transport's regulations and criteria for the siting of speed cameras were originally produced in 2006 as part of the Road Safety Partnership programme. The scheme ended shortly afterwards, but few partnerships have gone on to change their siting criteria. The West Yorkshire Safer Roads Partnership has recently made changes that will result in an increase in the number of sites that can now justify the use of speed cameras. The changes started with a study of roads where accidents were prevalent, but had not met the previous criteria for camera enforcement. The changes to the guidelines will help to prevent road accidents and deal more effectively with drivers exceeding speeds limits.

Key words: [Enforcement](#), [Safety](#)

One UK authority has recently changed its guidelines for selecting the location of speed cameras, based on a study of accident black spots in locations which did not meet the previous national criteria for siting cameras.

North Carolina to install interoperable e-toll system

Source: [Road Traffic Technology](#)

The North Carolina Turnpike Authority (NCTA) wants to install an electronic toll collection (ETC) system on their Triangle Expressway, 19 miles of existing toll roads in and around Wake County.

Cash operated tolls will be replaced with an All-Electronic Toll (AET) system that is compatible with other tolling systems in the State. The AET system will enable users to continue to use cash, pay in advance and have their vehicles identified with Automatic Number Plate Recognition (ANPR), or use radio based tags. It is anticipated that the majority of users will be able to go through the new tolls without stopping, providing significant journey time and congestion benefits.

Key words: Payment

The North Carolina Turnpike Authority in the USA is planning to install an electronic toll collection system on the Triangle Expressway, enabling users to pay without stopping, thus improving journey times and reducing congestion.

■ RECENT PUBLICATIONS

Local perspective: comparing adaptive urban traffic control systems

Source: [ITS International](#)

Adaptive Urban Traffic Control (UTC) systems react to changing traffic conditions and alter signal timings to reduce congestion. This flexibility and intelligence can reduce CO₂ and NO_x emissions and fuel consumption compared to congested conditions created by fixed plan systems. The article compares the common German UTC system, Sitraffic MOTION methodology with SCOOT, the UK's most common system.

Key words: Environment, Traffic management

This article compares the Urban Traffic Control system commonly used in Germany, Sitraffic MOTION methodology, with SCOOT, the UK's most common Adaptive Traffic Control System.

■ GLOSSARY

ANPR	Automatic Number Plate Recognition
ALPR	Automatic License Plate Recognition
CCTV	Closed Circuit Television
ETC	Electronic Toll Collection
GPS	Global Positioning System
IP	Internet Protocol
ITS	(Intelligent Transport Systems): "The integration of information and communications technology with transport infrastructure, vehicles and users" [ERTICO]
ITS CoE	ITS Centre of Excellence
NCTA	North Carolina Turnpike Authority
RCC	Regional Control Centre (Highways Agency Traffic Centre)
TMC	Traffic Management Centre
UTC	Urban Traffic Control
UTMC	Urban Traffic Management and Control