

Deny the road to the criminal

A new protocol for local authority ANPR systems has been extended to ensure that data can be shared with the police, writes traffic specialist and TEC Editor Carol Debell.



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▶ Peter Billington,
Senior Partner,
Telematics
Technology.

Automatic Number Plate Recognition (ANPR) provides a powerful tool in the drive to "deny criminals the use of the road". Vehicle intelligence can link criminals to vehicles and vehicles to crime scenes. And it enables the police to intervene when these vehicles are identified on the public highway.

The underlying proposition is very simple. There is a strong correlation between those people who are guilty of various types of vehicle crime and those people who engage in criminality. In short, criminals are more likely to drive untaxed and uninsured vehicles, actions which are easily detectable using ANPR.

As a result the odds on a criminal using a vehicle being the subject of positive action by the police rises from very slim to very high and even if not caught immediately, ANPR will continue to detect their presence and increase their vulnerability and risk each time they use the road.

To be effective, the national ANPR network has to be comprehensive and a lot of work has gone on over the last couple of years both to extend the primary network but also to work with partners using ANPR for other purposes. Since the launch of Project Columbus in 2006, a concerted effort has been made to extend the national ANPR network to cover private-sector sites including car parks, shopping centres and petrol stations.

The aim is to expand the system to 100 million 'reads' per day, all of which will be stored by the National ANPR Data Centre in Hendon. These reads will provide the time, data and place of each vehicle sighting and will be stored for five years providing a valuable source of intelligence for the future.

An additional source of ANPR data has become available over the last couple of years as local authorities all over the country invest in journey-time measurement systems. They are doing this because the Traffic Management Act 2004, which requires local authorities to tackle congestion and disruption on their road network, is now beginning to bite. The starting point is to measure congestion, a somewhat controversial concept in its own right. The method of choice in many areas is to use ANPR on strategic routes. Number plates are read as a vehicle enters a pre-defined zone, and then



read again as it leaves. Provided a reasonable number of "matches" is achieved, the authority is able to build up a picture of average journey times across the city. Not only does this provide the data for year-on-year comparisons of average speeds, hopefully showing improvements, it also enables traffic managers to identify incidents in real time, for instance as journey times suddenly spiral.

It is this new focus on journey-time measurement which has brought ANPR within the focus of the UTMC initiative. UTMC (Urban Traffic Management and Control) was a £6m project launched by the Department for Transport in 1997 with the aim of ensuring that the different applications used within modern traffic management systems are able to communicate and share information with each other.

The project has been through a number of phases – in 2001 full scale demonstration projects took place in Preston, Reading, Stratford-upon-Avon and York. These involved a wide variety of suppliers and demonstrated

both the advantages and the challenges of trying to integrate equipment from different manufacturers. It led to the setting up of the UTMC Development Group (UDG) which consists of stakeholders including local authorities and suppliers and the development of UTMC Technical Specifications which define UTMC standards.

Essentially, this initiative means that as more and more local authorities go down the UTMC route, instead of having to negotiate their way round design of new systems, they can build on the experience of the early adopters knowing that the equipment that they procure will all work together. Interoperability is the aim and although it is not quite a plug and play environment, because these are sophisticated systems and each one is different, it does ensure that integration of systems is relatively easily achieved.

In a fully functioning system the data being produced from a range of sources including traffic signal controllers, detectors, CCTV cameras etc feeds back into a common database. This database draws live data from the streets as well as historic archives enabling traffic controllers to manage traffic flows and incidents and in turn to inform the public via Variable Message Signs, SMS messaging, websites etc.

ANPR is becoming an increasingly important part of the mix which is why, in 2007, a UTMC ANPR Working Group was set up to develop an open protocol for use by ANPR cameras when connecting to UTMC systems.

Peter Billington is the current chair of the Working Group. Billington is a senior partner in engineering consultancy Telematics Technology. He has particular expertise in the design, development and deployment of ANPR systems and was the technical authority for the two largest ANPR-based journey time measurement systems in the world – the UK National Traffic Control Centre and Trafficmaster.

Billington says the fact that ANPR came relatively late to the UTMC standards environment has had its advantages. Traditionally, he says, there has been a lot of

concern about going down the web services route because of the amount of bandwidth required. "There is less concern about this now because bandwidth is becoming cheaper. XML web services is the way the world is going." As a result, the new protocol is one of the first in the UTMC stable to move away from the use of SNMP (Simple Network Management Protocol) and embrace the new direction towards XML web services.

The ANPR protocol is also a first in that it has extended its focus beyond traffic management. Journey time measurement using ANPR simply requires a number plate read and a subsequent match. However, Billington points out that if these systems are to share data with the police, then images will be required.

"The feedback we received was that more and more local authorities are wanting to do the right thing and share cameras with the police so we wanted to be sure that the data being produced by the cameras would be capable of meeting police ANPR standards. Until now these systems typically have used text or binary protocols which made no provision for sending images." Additionally, he adds that built into the protocol is the provision to send the kind of data not currently being sent by these systems.

"We have included data such as the classification of the vehicle, the make, model, the colour etc. That data is not used for journey time measurement but it is potentially very interesting to the police." The other important addition is in the area of diagnostics. "We've done a lot of work on predictive maintenance. It means a lot more can be done remotely and reduces the need to send someone out onto the road."

The draft protocol is now with the UDG and all being well should be published in the next draft of the UTMC standard. And what does this mean in practice? Billington: "Any local authority buying UTMC compatible cameras in future, should they be in partnership with the police, will be able to provide the data required by the National ANPR Data Centre."

For more information visit www.utmc.uk.com. Peter Billington can be contacted on Peter.billington@telematech.co.uk

CCTV and ANPR team up in Northamptonshire

A crime prevention and safety scheme, using a CCTV and ANPR camera system supplied by Nova Integrated Systems, has been installed on the Brackmills industrial estate, thanks to a grant from the West Northamptonshire Development Corporation.

The estate had been hit by a spate of lorry jackings and thefts – cargoes stolen from lorries included clothes, TVs and other electrical equipment.

Mike Franklin, formerly crime prevention manager with Northamptonshire Police, said that good images were being received

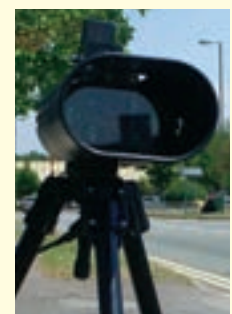
by radio transmission technology and covered all entrances/exits to the estate. "The system can store up to two years of data from the ANPR system which could be used as a post investigative tool for any incidents." He confirmed that since the cameras and ANPR became operational there had been a massive drop in crime with road freight crime and dangerous parking almost eradicated.

Charlotte Patrick, sector development manager with Northamptonshire Enterprise Ltd, concurred with these comments. She said that following the

introduction of the cameras onto the estate there had been a significant drop in external crime and that the cameras were certainly working as a deterrent.

An important feature of the system designed by Nova was that it could produce high quality images using radio transmission technology which would deliver an ongoing cost saving to Northampton Council over the alternative fibre systems available.

Businesses on the state have made a commitment to pay for the on-going maintenance and monitoring of the system.



The PIPS P382 SpikeHD is a fully integrated number plate reading system, designed for use in high performance applications where multiple lane coverage is required.