Streets Ahead
The magazine of Siemens Mobility, Traffic Solutions | May 2010

www.siemens.co.uk/traffic

Design Services
pages 4-5

Sicore
The next generation of ANPR
page 7

Elektra
All new VMS family
page 3
Welcome

Welcome to Streets Ahead, the magazine of Siemens Mobility, Traffic Solutions.

It has certainly been an interesting few months since the last edition of Streets Ahead with an election, a new Government and a new Transport Secretary now in place. As Government priorities and policies become clearer, our aim at Traffic Solutions remains the same - to deliver customers innovative and sustainable new products and a reliable quality service. In this edition of Streets Ahead, we highlight a number of our very latest product developments. We present Elektra - our new VMS family (opposite page), SafeZone - a new approach to casualty reduction using average speed enforcement (page 6) and Sicore, our exciting new ANPR camera (page 7).

On pages 4 and 5 we showcase the varied work of our Design Services team, the consultancy division of Traffic Solutions. Members of the team will be presenting at RTIC 2010, the IET Road Transport Information and Control Conference in London on May 27th. The paper, “Modelling adaptive control: A reality?” investigates the effectiveness of microsimulation as a tool to compare and improve detailed control strategies.

Our continued commitment to cost saving, sustainable solutions is further demonstrated with another significant order for Helios retrofit solution (see below).

As always, we hope you enjoy reading Streets Ahead and look forward to seeing you soon.

Essex reduces energy bills with new LED technology

In partnership with SA2000, a joint venture between Siemens and leading consultants Atkins, Essex County Council has recently started the second phase of a retrofit programme to replace traffic signals with newly developed LED technology from Siemens.

Aimed at reducing carbon emissions and power consumption, the project involves replacing over 750 signal heads with new LED technology at 47 junctions on a range of major routes across the county including sites in Colchester, Braintree and Chelmsford town centre.

According to Andy Champ, Senior ITS Specialist, representing Essex County Council, the new technology is expected to deliver considerable carbon and energy savings, reduced costs and enhanced safety. ‘With the advantage of a strong working relationship with SA2000 contract partners, the retrofit programme represents another major ITS improvement in Essex and, more importantly, is highly sustainable. Based on a typical, medium-sized site, the annual power saving per site is estimated above 4,000KWh and the annual carbon saving over two tonnes per site’, he said.

Cost effective traffic control is of growing importance and plays a critical role in the future of Essex County Council’s transport networks, in particular addressing congestion and improving traveller information and safety on the county’s roads.

Siemens’ low-power Helios retrofit solution enables both existing Siemens Helios and Peek Elite signal equipment to be upgraded to the latest Siemens CLS LED technology, whilst maximising the re-use of existing roadside infrastructure. Without compromising functionality or infrastructure investment, the additional future benefits include further carbon savings. These occur as a result of a reduction in the number of maintenance visits to regularly replace and clean traditional incandescent lamps that consume large amounts of power.
Introducing the all new Elektra

Elektra, a brand new variable message sign (VMS) family launched this month by Siemens, provides highly visible and concise information to drivers, enabling them to be better informed, reducing traffic congestion and journey times while lowering pollution levels from queuing traffic. Fully developed by Siemens to address the needs of the market, the all new Elektra family of VMS offers a highly configurable, adaptable and flexible solution to meet the requirements of variable message signs in a wide variety of different situations.

Mark Bodger, Systems Marketing Manager says: ‘Siemens is providing customers with a totally new solution for variable message sign implementations, including all civil engineering works, traffic management, installation and commissioning. Elektra signs bring a number of key benefits to all styles of installation, whether car park, driver information or for other applications. Available in a range of different enclosure sizes, with display characters from 100mm up to 320mm and easy integration to new and existing UTMC management systems, Elektra VMS efficiently provides real time car park and traffic information to drivers.’

Elektra VMS uses the latest modern surface mount technology ensuring accurate alignment of display modules along with efficient low power control electronics, minimising the power consumption of the sign when installed and in daily use. For car park applications, Elektra offers the option of dual colour red/green displays. All signs in the Elektra family provide monitoring of individual pixels across the entire display. Intelligent character displays allow easy plug and play configuration for engineers, minimising the time required on site for any maintenance activities.

Ongoing maintenance and support of Elektra VMS is streamlined by full commonality of parts with the latest Siemens Gemini UTMC outstations, reducing the range of spares required by engineers on a daily basis. Full support for the Siemens Outstation Support Server provides efficient monitoring of faults and upgrading of firmware or sign configurations with minimum effort required on site.

An all new enclosure design offers easy access for maintenance along with flexible mounting options, including traditional multi pole installation and a range of monopole cantilevered structures. Simple mechanisms with monopole installations allow efficient, easy adjustment for carriageway alignment and optional elevation of the sign, minimising the time required on site and any associated traffic management congestion. Elektra enclosures are sealed to IP55 and include integral work positioning attachments for safe working during installation, commission and ongoing maintenance.

Elektra VMS from Siemens offers the complete solution for effective information display as part of an integrated UTMC traffic management system.

• All new enclosure design for easy installation and safe access
• 100, 160, 240 and 320mm character sizes
• EN12966 approved
• UTMC compliant interfaces
• Flexible communications options
• Single or dual colour displays
• Dynamic car park direction arrows
• Advanced fault monitoring
• Web browser user interface for configuration, support and maintenance

colin.pennington@siemens.com
Linked MOVA in action

In Northern Ireland a busy bypass site has been successfully upgraded to run linked MOVA, replacing the fixed time plans that were time consuming to maintain and had become outdated and unable to cope with changing traffic patterns.

MOVA was identified as a possible mechanism to improve the site. Design Services used micro-simulation to create a model for the area which was coded with the on-street fixed time plans and then linked to MOVA in order to evaluate the potential benefits. Modelling offline also gave support to the MOVA design as different linking strategies could be evaluated without the cost and potential disruption of on street experimentation.

With the modelling suggesting MOVA would deliver clear advantages, the site was then carefully configured with priority linking through the MOVA dataset and queue detection loops. The site has been enhanced to more effectively link the signals providing optimum progression through the junctions while minimising the effect of queuing on the bypass. The overall result is a more free-flowing, flexible junction which deals with varying traffic demands more efficiently.

‘I’m very satisfied with the improved journey times that have resulted through the implementation of linked MOVA at these junctions’

Colm McElholm from Omagh’s Department for Regional Development, Roads Services, commented on the effects of the implementation saying: 'I’m very satisfied with the improved journey times that have resulted through the implementation of linked MOVA at these junctions. Prior to implementation, queues were very apparent particularly on the Friday and Monday of a Bank holiday weekend. The new system now copes very well with any unexpected traffic fluctuations.'

Comet in Barnsley

Design Services has been working with Barnsley Metropolitan Borough Council to evaluate its Comet system and the performance of network control strategies. Comet allows traffic managers and operators to control and monitor their urban networks, including modules for network monitoring, car park guidance, incident and event management and strategic control. As with all systems, a Comet ‘spring clean’ can prove useful in removing unused or out-dated strategies and data to ensure the most efficient running of the system.

The work in Barnsley included investigating a high profile site, just a short distance from the motorway. The junction runs a combination of MOVA and SCOOT control determined by a Comet plan looking at congestion on UTC links and timetable. By monitoring and interrogating the system, the engineers were able to build a clear picture of how the junction was operating, how often the strategy was being called and how effectively it was working to clear congestion. With a full understanding of the junction’s configuration, a reconfiguration was possible to improve the operation of the junction by relocating some of the queues.

Design Services can ensure that systems are performing optimally due to their experience in Comet, eMerge, RMS and DUSC as well as providing advice on how to use the applications most effectively to meet specific network requirements.

Blackpool Tram

The Blackpool to Fleetwood tramway is currently undergoing a £100m upgrade of rolling stock and infrastructure including platforms, depots and signalling. Design Services is responsible for the design and validation of 16 junction upgrades, from minor modifications to full renewals. The redesign includes the supply of the company’s latest development, a dedicated Extra Low Voltage tram signal head, together with the installation of priority signals at highway junctions to improve journey times. The incorporation of Light Rail Transit signals into a traffic signal junction has required investigating the links to the tram detection system and the impact of tram priority at the sites. MOVA will also be introduced at all sites to allow tramway priority to operate whilst reducing the effect on traffic at the junctions.

Trams have been operating in Blackpool since 1885 and form a key part of the local transport network as well as being a well known tourist attraction.
Design Services is the consultancy division of Traffic Solutions. A regionally based network of engineers, the department offers a wide range of traffic engineering solutions and services to a variety of clients, ranging from Local Authorities to Civils companies. The Design team’s expertise includes junction design, implementation of MOVA and SCOOT, specialist design knowledge, and established skills in microsimulation including modelling with MOVA and UTC.

Capital projects

Transport for London (TfL) is the UK’s largest highway authority and is responsible for over 6,000 traffic signal controlled sites ranging from pedestrian crossings to complex junctions and signalised roundabouts. Siemens has always worked closely with TfL, installing and maintaining traffic signal equipment throughout the Greater London area. Our most recent projects have expanded this support relationship by providing traffic signal design consultancy services through our Design Services department.

Major upgrade

As part of TfL’s ambitious program of traffic signal modernisation, refurbishing 300 traffic signal sites a year, Design Services has re-designed a number of sites to the latest TfL standards, capitalising on new technologies and recalculating signal timings to reflect current traffic patterns. This included managing and coordinating the works on each site; from design to implementation and commissioning. Civils works and traffic management had to be organised to tight schedules and around other planned works; liaising with all the relevant stakeholders. Managing expectations was key to the successful delivery, which prompted TfL to award Siemens Design Services a threefold increase in subsequent works packages, including a number of inner Boroughs and some high profile sites such as Oxford Street and Piccadilly Circus.

iBUS

The iBUS project in London was successfully wrapped up last month with completion of the last of over 1,800 sites.

iBUS is a sophisticated bus priority system using Global Positioning System configuration to track the movements of buses through the city and is one of the largest Automatic Vehicle Projects in the world. iBUS allows effective use of bus priority at signals and enables accurate real time information to be relayed to passengers. The new system replaces an older bus radio and communications network which was becoming outdated and overwhelmed by the number of buses it managed.

A dedicated Design Services team managed the design, installation and commissioning of the GPS based selective vehicle detection equipment at all of the identified junctions and pedestrian crossings. Originally contracted to complete 1,600 sites over four years, the project scope was extended to 1,850 sites and time scale reduced to three years.

Design Services played an integral role in the project providing expertise in a number of areas; on street site surveys, data collection from TfL’s Site Fault Management system, detailed bus priority design, positioning Virtual Bus Detection Points on street and construction of the bus database.

Once site designs had approval, the installations were carried out by Siemens’ Field Services and commissioned by Design Services Engineers showing Siemens’ capabilities for turn key solutions in action.

This project, the largest of its kind, is one of several bus priority projects that have been completed by Design Services.

If you would like more information about Design Services please contact Brian Carpenter at brian.a.carpenter@siemens.com or go to our website at www.siemens.co.uk/traffic
Casualty reduction through average speed enforcement

SafeZone is an average speed enforcement solution specifically designed to enable customers to enforce speed limits at safety critical areas such as outside schools and in villages, using our new Sicore ANPR camera system (see opposite).

Based on industry leading automatic number plate recognition technology, Siemens’ latest addition to its range of civil and criminal enforcement solutions has been formally accepted onto the Home Office approval process for Speedmeter devices by the ACPO Road Policing and Enforcement Technology Committee.

The solution has been designed to increase the number of deployment options currently available with existing average speed enforcement systems and reduce the number of cameras and infrastructure required to provide effective casualty reduction programs. Mark Bonnor-Moris, Product Manager for Enforcement Systems, said: ‘SafeZone has been designed to minimise the impact on the existing streetscape or rural environment. Cameras can be mounted on existing street or highway fixtures with a single camera enforcing two lanes of traffic either single or dual direction. This significantly reduces the number of cameras required for zone enforcement, reducing the environmental impact and cost of deployment’.

Operating by identifying all vehicles as they enter an enforcement zone, SafeZone calculates average speed against the exact distance travelled within the zone. Evidential records are created for vehicles exceeding the speed limit and remotely sent to the back-office in-station for processing. SafeZone has a high level of measurement and timestamp accuracy that enables the system to be deployed for multiple enforcement applications. SafeZone can be deployed with a minimum of 75 metres between cameras, and the system also supports multi-lane and multi-entry and exit points, ensuring customers can use SafeZone for all types of urban, rural, highway or motorway average speed enforcement.

- Low cost and effective
- Designed for urban average speed enforcement
- Improved driver compliance and reduced violations
- Reduced accidents and casualties
- Removes requirement for traffic calming
- Multiple lane coverage with single camera
Product Launch

Sicore - The next generation ANPR camera

Designed to automatically read number plates from two lanes of traffic in both directions simultaneously, Siemens’ new Sicore ANPR camera serves a wide range of traffic management and monitoring applications.

- Journey time monitoring
- Road user charging systems
- Average speed enforcement
- Car park monitoring
- Access control

Referring to Sicore’s impressive number plate reading capability of a full four metres width for single lane applications and seven metres width for dual lane applications, Systems Marketing Manager, Mark Bodger says: ‘Sicore is capable of capturing both front and rear facing number plates from vehicles and includes an integral infra-red illuminator with a range of up to 35 metres for 24/7 operation. Compared to previous solutions, the new system needs fewer components and offers highly accurate capture of number plate information from a much larger detection zone with a single camera.’

High speed number plate recognition

Using technology originally developed for character recognition in postal sorting machines, the integrated ANPR engine from Siemens attains maximum read rates at vehicle speeds of up to 200 km/h. Special algorithms enable the system to accurately recognise number plates from many different countries without manual review, reducing the need for post-processing effort in enforcement solutions to provide an efficient solution.

Linking directly to Comet, Sicore is an integral component of journey time monitoring solutions. Mark Bodger explains: ‘Effective journey time monitoring requires a good match rate of number plates between cameras. The wide detection zone of the Sicore camera maximises the capture of all number plates passing a camera, ensuring a good source of data for the journey time calculations. Sicore is also used as a key component for average speed enforcement solutions such as SafeZone (opposite page), as well as for congestion charge and tolling operations.’

Integrated data security

Sicore can also include search lists for up to one million vehicles stored locally in the camera, with detection of a listed number plate initiating predefined actions such as automatic forwarding of the recorded data to a management system – useful both in enforcement and security applications, as well as monitoring specific vehicles for classified journey time monitoring, for example public transport vehicles. The data transmission is encrypted using industry standard protocols and hashing algorithms are also used where appropriate to ensure the anonymity of number plate data.

Sicore cameras are designed for operation in the roadside environment with robust construction and minimal maintenance requirements. The cameras operate without the need for any fan cooling at outdoor temperatures from -30°C to +60°C and the critical infrared illuminator uses an intelligent exposure control mechanism, dramatically increasing the service life of the camera compared to previous solutions.

kevin.jones@siemens.com
Based on Siemens’ ST900 LV and ELV controllers, the new wig-wag solution has been approved to Highways Agency specification TR2513. The wig-wag signals use the proven Helios central light source modules that are widely installed throughout the UK.

According to Keith Manston, Head of Product Management, the new wig-wag signals can be combined with normal intersection control. This offers reduced equipment requirements where the equipment is needed close to an existing intersection.

Recently commissioned on behalf of County Durham and Darlington Fire and Rescue Service, Siemens’ first wig-wag installation has recently commenced operation at the Peterlee fire station on Shotton Road to the west of the A19. On behalf of the County Council, Malcolm Sinclair, Traffic Signals Team Leader stated: ‘The Fire Service required a system which would alleviate concerns regarding safety and delay when fire engines were leaving the station on emergency calls. As reliability of such a system is paramount in achieving this, using a state of the art controller based on the ST900 gives a lot of confidence. From a maintenance point of view it is reassuring to know that spares and support will be available for years to come.’

![Peterlee fire station](image)

---

**Answers for the Environment**

Siemens' Answers for the Environment event allows you to discover ways to meet your organisation’s goals for energy efficiency and sustainability. It’s a two day, no cost event featuring practical seminars on technology, best practice and emerging trends, as well as an exhibition and networking opportunities.

**Dates and Times**  
29th and 30th June 2010  
09:00 hrs - 16:45 hrs

**Venue**  
RICOH arena, Coventry

For further information and to register to attend visit:  
[www.siemens.co.uk/afe](http://www.siemens.co.uk/afe)