CA Traffic

CA Traffic provide traffic monitoring equipment and software which collects valuable data on traffic volumes and classification from the dynamic traffic environment. Part of Hill & Smith Technology Group, the Company have significantly invested in product development to expand their portfolio into a diverse range of market leading vehicle classification and profiling products for the traffic engineering industry.

The Company has a solid reputation for providing good service and low cost easy to use products. A major strength of the company is in providing very low power equipment (including mobile communications) that can be sustained by battery and solar power – even in the UK. This allows low cost installation and avoids any location restrictions.

CA Traffic regards customer service key to is success in maintaining long term working relationships – beneficial to both sides.

Traffic Monitoring & Classification

The concept of vehicle monitoring and classification has evolved significantly over the years and some of the older generation equipment is still used today to provide local authorities with data to assist in the efficient management of the transport network. Tube based technology, which provides short term monitoring but less accurate data was one of the first types of classification product to be brought into the market by CA Traffic. The company used the knowledge and experience gained from this product to further improve the product range to Inductive Loops, which as well as being more accurate than Tube based technology, could also be used for longer periods or permanent installations in urban environments. The Company later developed the Radar Recorder that removed the requirement for laying loops and the civil engineering element associated, therefore providing a more efficient, cost effective product.

Loop Monitoring

- Easy to Use
- Profiling Technology
- 4MB Memory
- GSM Option
- Per Vehicle Mode
- Flash Upgradeable
- 128 Bins per Channel
- Low / Solar Powered
- Identifies 10 Types of Vehicles

Traffic monitor

- High Specification Outstation
- Advanced Low Power Detectors
- Profiling Classification
- Low/Solar Powered
- GSM Telemetry
- GPRS Ready
- Congestion Alerts
- Flash Upgradeable
- CA Software Compatible
- 2 Year Warranty

Minuteman EVR

- Tube Recorder / Classifier
- Optimised for Busy Roads
- Easy to Use
- Low Cost
- Sensitive Air Switches
- Congestion Algorithms
- Bicycle Monitoring
- Long Life Battery
- Aluminium Weatherproof Case
- CA Software Compatible
- 2 Year Warranty

Radar Recorder

- 24.2GHz Radar UK legal
- 6volt Rechargeable Battery
- Quick-mount Bracket
- Binned & Per Vehicle Data
- Flash Upgradeable
- 4MB Memory Standard
- Non Critical Radar Head
- 2nd Generation Algorithms
- Easy Setup
- Vehicle Classification
- 2 Year Warranty

Speed Indication Display

One of the priorities for the UK Government is to reinforce the need for drivers and other road users to take responsibility for their own safety and for the safety of others on the road. The speed indication display (SID) is designed to improve road safety in urban areas by creating driver awareness of the speed they are traveling within restricted speed zones. A “smile” indicates their speed is of a satisfactory level should it be under the threshold, and a “sad face” indicating that they are exceeding the speed limit.

Local authorities can use the SID for a non-confrontational solution to promote safety and driver awareness without enforceable action being taken.

- Microwave Technology
- Portable Speed Indicator
- Easy to Use
- Sled or Pole Mount
- Low Power
- Smiley Face
- Simple to Operate
- Immediate Impact
- 2 Year Warranty

Loop Cutting & Installation

CA Traffic also provide a range of services to support the traffic engineer. These include a specialised loop cutting, installation and site diagnosis service. CA Traffic’s field crews have years of experience within this area and are recognised for their dedication and commitment to giving the best service.

- Complete Installation Service
- Inductive Loop Cutting
- Bicycle Loop Installations
- Fully Trained Personnel
- Traffic Management
- Full UK Coverage
- Roadside Furniture Installations

ANPR – The Future Generation

The Company have recently developed and launched “Evolution”, a unique web based Journey Time System which uses their own ANPR camera technology.

“Evo8” ANPR camera and “Evolution” software system, boast state of the art technology in accurate monitoring of traffic in both urban and highway environments. The new system offers the market a different approach to the existing ANPR concept offering flexibility and application of this technology in a practical environment.

The camera, Evo8, is stylish and easy to use, most importantly it provides two-lane coverage at a price more usually associated with a single lane camera. The camera can be positioned for permanent or temporary installations to monitor problem areas providing real time information through GPRS communications to a secure web based server. This valuable data which includes information on vehicle volumes, classifications and speed is provided direct to the end user rather than through the operator which provides significant cost savings for the client. The unique aspect of this camera and system is the ability to accumulate information using vehicle license plate recognition technology to enable local authorities and the safety camera partnerships to identify frequent offenders breaching speed limits in restricted areas.

By using the Evo8 and Evolution System, safety camera partnerships can act on frequent offenders by issuing a warning letter detailing offences that have been monitored and recorded. This application enables the authorities to carry out prevention prior to penalty by promoting better driver awareness through educating drivers of their faults and road safety.

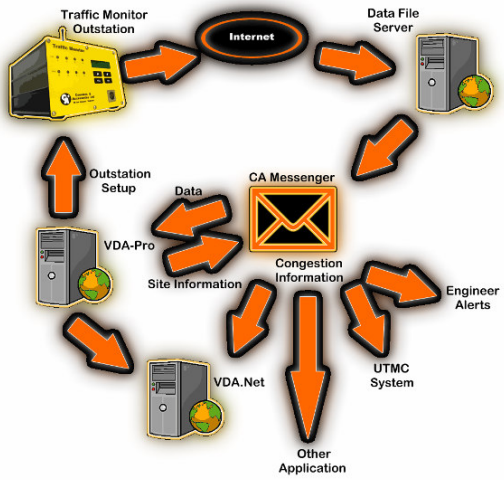
Evo8

- Infra-red ANPR Camera for 24 hour operation
- On-board processor and ANPR software
- Optional recognition of plates in two lanes simultaneously
- Option high-resolution colour overview camera
- Recognition of plates from ALL European countries
- High Power infra-red LED illumination with 25m range
- 3G, Edge, GPRS, Wifi and Ethernet communications
- Live high-resolution digital video over gigabit Ethernet

Evolution
The new dimension in journey time monitoring

Software

The company has largely invested in software to compliment its product range. Highways authorities are able to view and monitor the data being collected through the use of a software system, VDA Pro, which has also been developed by CA Traffic. This system allows the user to download the data recorded from a secure web based server which can be accessed at the users convenience and has become the leading database in the UK for the management of large-scale traffic data collection operations. CA Live is a software application system which allows the automatic acquisition of traffic data in real-time, making information available for numerous applications including congestion alerts and incident detection.

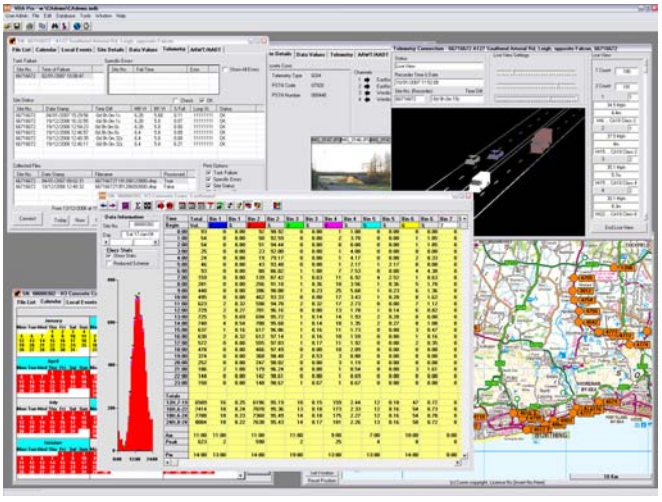


CA live

- Flexible and Scalable
- Processing of Real Time data
- External Interfaces, inc. UTMC
- Site Status Alerts
- Congestion Alerts
- Microsoft SQL Server based
- Intuitive fault identification

VDA Pro

- Traffic monitoring database
- Powerful, intuitive functionality
- Multi-user support
- Integrated Mapping and Telemetry
- Internet / Intranet data publishing (VDA .Net)
- UK Market Leader



Associated Propositions

CA Traffic has established partnerships worldwide with key road safety product providers to compliment their product range.

Red Speed

RedSpeed™ International is a leading supplier of digital solutions to the traffic enforcement industry, specialising in the development, research, manufacture, installation and maintenance of digital enforcement cameras. Fixed and mobile digital enforcement solutions have been implemented across the world, from the USA, Africa, West and Eastern Europe to Asia.

RedSpeed™ holds ISO 9001 certificate and UK Home Office Type Approval on digital fixed equipment.

Development Projects

The Company are also working closely with various UK University projects to aid the development of products to monitor air quality associated with vehicle usage. The combination of traffic and air quality monitoring allows the authority to measure the effectiveness or impact of traffic management plans.

Queue Detection with Techspan Systems VMS

Today people on the move, whatever their mode of transport, expect up to the minute, accurate information.

A queue detection system monitors the vehicles that pass over a specified area and raises an alarm if the vehicles are queuing. Each queue area is supplied with its own independent detection system comprising of loops, traffic monitors, system controllers, wireless interface to VMS, and optionally to RCC and for remote maintenance.

The system is based on inductive loop equipment supplied by CA Traffic whose Traffic Monitor uses vehicle speed and vehicle occupancy to measure congestion. All congestion parameters are adjustable to suit a given applications and the product is flash upgradeable in the event of more substantial performance changes.

The speed of each vehicle is passed to an accumulated average measurement (AAM) using a first order low pass filter (the filter speed is user adjustable and can be set fast to get rapid response to congestion or slow if the road is prone to significant speed variations in normal traffic).

Congestions alerts are issued when the AMM crosses a threshold. Four thresholds are defined within the Traffic Monitor and each threshold is user adjustable to suit the road. For example on a 50mph/80km/hr ring road, typical settings could be 45, 35, 20,10mph (72, 56, 32, 16km/hr).

Occupancy detection is included to avoid the problem where the average speed detection fails to detect a queue when the traffic stops abruptly. In this situation the average speed is not updated as the vehicles are not moving and hence the AAM never crosses a threshold.

The system controller will trigger a queue warning on the associated VMS when either of the traffic monitors reports vehicle occupancy or an AAM trigger for any of the loops. The Queue message will be switched off when all loop arrays report free-flow traffic using the AAM speed algorithm: occupancy cannot provide a good guide in this respect.

Traffic Monitor utilises CA Traffic's industry recognised low-power vehicle detection technology used in over 5,000 UK locations, and provides enhanced functionality to a standard traffic monitoring outstation.

The advanced profiling detectors allow for sophisticated classification from loops as well as speed accuracy.

The system controller receives data from the two traffic monitors, processes that data, and sets the VMS accordingly.

Essex Safety Camera Partnership - September 2006

Essex Safety Camera Partnership had a requirement to collect speed and classification data from around 17 safety camera locations. The system has grown significantly since its inception.

Atkins, the consultant for the project, wanted to take the opportunity to investigate the capabilities of Traffic Monitoring equipment for use in live congestion monitoring.

CA Traffic was able to deliver a cost effective, simple to manage solution to fulfil both of these initial requirements.

Atkins defined the following requirements:

Solar powered / low cost solution
Data availability over the Internet
High reliability
Responsive to changing traffic conditions
Existing CA Traffic equipment can be upgraded

CA Messenger, the live processing application, was refined to fully comply with the requirements as set out by Atkins. CA Messenger processes the incoming data, outputs it into a VDA-Pro database and produces live congestion information.

These processes are user configurable 'services' that run as part of CA Messenger. The VDA-Pro database population means that the data is available from the database typically within a minute of the end of period.

To achieve data availability over the Internet, VDA Net provides a secure web browser interface to the data within the VDA-Pro database.

The VDA Net website had features added to meet the requirements set out by Atkins, offering the ability to not only view the data over the internet, but download the DMP files (as part of a weekly .zip archive produced by CA Messenger) and view the live congestion information produced by CA Messenger.

To meet the requirement for responsiveness, in addition to sending GPRS data at regular intervals, the Traffic Monitor outstation will send a GPRS message if the average speed on site crosses user definable boundaries (these can be configured per lane). This means that the system can react very quickly to changes in conditions on site, without having to constantly stream back data.

To maintain basic congestion reporting functionality in the event of GPRS failure, the system has the ability to deliver congestion information via SMS.

The map based live data view in VDA Net is used as an integral part of the Traffic Information Wall in the Essex County Hall Traffic Information Centre.

The system has since been extended to 45 sites and the requirement for a UTMC interface has been added. The system has been tested against the Comet UTMC Database (Siemens) and will be delivered shortly.

Oxfordshire County Council – April 2008

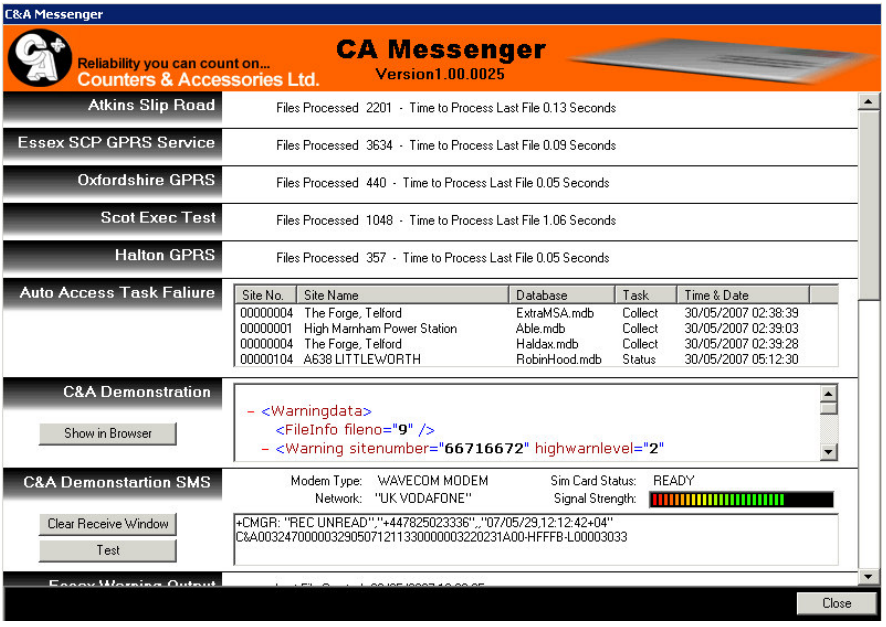
As part of their Travel and Information Management Policy, Oxfordshire County Council aimed to manage congestion along key traffic routes and gain a better understanding of the operation and limitations of their road network.

As part of this policy, OCC wanted to trial some live congestion monitoring sites and explore the possibility of Car Park Occupancy monitoring, with the intention of the data being pushed through to their UTMC common database.

7 Traffic Monitor outstations were supplied and installed around Oxfordshire, with data sent back every 5 minutes and processed by CA Messenger.

At the time of the outstation deployment, Oxfordshire County Council's UTMC database was not due to be ready until 2009. In lieu of this, the VDA Net live data view was used to display the congestion information produced by CA Messenger whilst the UTMC infrastructure was developed.

The Car Park Occupancy monitoring trial required data to be sent back every minute, so mains powered cabinets were specified. After site inspections, these were installed at 9 sites across 5 Park & Ride car parks, and once the mains supplies were in place, the outstations put on site.

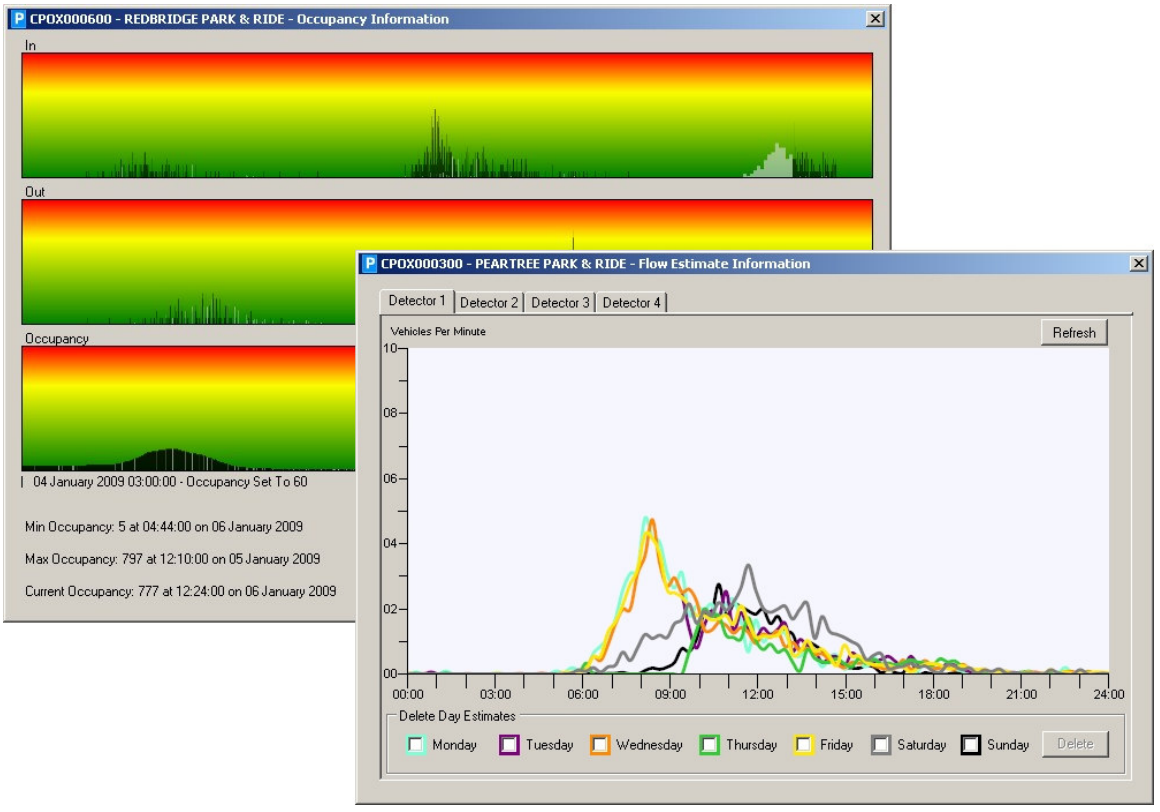


CA Messenger was used to process incoming data sent over GPRS by the outstations. CA Messenger processes the incoming data, outputs it into a VDA-Pro database,
produces live congestion information, and outputs UTMC XML files.

These processes are user configurable 'services' that run as part of CA Messenger. The VDA-Pro database population means that the data is available from the database typically within a minute of the end of period.

An additional service was developed for CA Messenger to process the incoming data from the 5 car parks. This service includes powerful functionality to estimate flows based on historic data should communications with an outstation fail, and the ability to automatically reset the occupancy to any value at a user defined time.

The CA Live Site Manager was also further developed for the creation and set-up of Car Parks. Through this application the automatic occupancy resets can be configured, as well as manually setting the occupancy of the car park at any time (instantly updating the current occupancy). The estimation system can also be graphically analysed, with the ability to delete the historic estimate values for each day should there be a prolonged issue with the site.



To achieve data availability over the Internet, VDA Net provides a secure web browser interface to the data within the VDA-Pro database.

The VDA Net website not only allows viewing of the data over the internet, but the DMP files can be downloaded (as part of a weekly .zip archive produced by CA Messenger) and the live congestion information produced by CA Messenger can be viewed.

OCC were interested in making use of VDA Net as part of their corporate intranet, not only to reduce time spent by traffic engineers serving requests for data, but to increase the value of their data by making it more readily available to any permitted employees through an easy to use browser based interface. VDA Net was visually tailored to fit the OCC intranet scheme.