In March 2001, Traffic Information Services (TiS) (a wholly owned subsidiary of Serco) was selected by the UK Highways Agency (HA) to design, build, deliver and operate its National Traffic Control Centre (NTCC) project, a 10-year £160M Public-Private Partnership contract to deliver and operate an accurate and relevant traffic information service for road users and transport operators throughout England.

Serco was responsible for all aspects of the implementation and delivery of the operational service. In addition to the design, construction and operation of the control centre itself, Serco engineers designed and developed the technology solution, including a suite of highly complex and innovative software systems, installation of over 2500 field sensors and the network and asset configuration data needed to support the operational systems.

NTCC was the first operation to use a comprehensive suite of technologies to obtain a clear picture of actual and predicted road network traffic conditions for an entire country. This provides accurate, and timely travel information, enabling a pro-active and more effective response to changing traffic conditions and incidents.

NTCC collects and manages extensive decision support information about the performance of the road network, including a database of road characteristics, information about incidents and other events, traffic flow, journey times and weather conditions.

Information from NTCC is provided through Variable Message Signs (VMS) at key locations on the road network, a public internet site, an interactive voice recognition telephone service and via the media to help travellers with route choices. NTCC has worked with the Highways Agency to further develop the timeliness and accuracy of information, for example by displaying up-to-date Travel Time predictions on VMS.

TiS has worked closely with organisations such as the Police and Local Highway Authorities to develop national and local agreements to cover the operating procedures between all parties. The control room is a fine example of the public and private sector working together towards a common aim.
NTCC’s fully trained, 24/7, control room staff use sophisticated traffic monitoring equipment and modern ITS methods. They deal quickly and efficiently with some 7,500 events per month (of which around 4,000 are unplanned) and put in place information plans to alert and inform travellers.

Data, collected every minute from 4,500 traffic sensors, is evaluated against historical trends. Where abnormal flows are detected, staff are alerted. If the cause is found to be an accident or major incident NTCC supports the work of its operational and media partners. During events in London in July 2005, NTCC substantially assisted in providing public safety information alongside travel news and stemmed the flow of vehicles approaching London.

To meet the challenges of road expansion it is important to fully utilise network resources by data mining all information that can be collected. NTCC’s operation system is also a leading application in this field.

The NTCC provides the following:
- Traffic Monitoring
- Incident Detection
- Incident Management
- Variable Message Signs
- CCTV Surveillance
- Video Wall
- Communications System
- Roadside Equipment Maintenance
- Management of Abnormal Load Movements
- Event Management
- System Integration
- Database Management
- Strategic Route Planning
- Strategic / Tactical Route Diversion
- Driver Information
- Network Operation / Management
- Geographical Information System
- Management of the impact of planned events on the road network

System Overview

The system design and development task for NTCC capitalised on the significant application domain expertise and product knowledge developed by Serco’s Transportation Systems Technology team from over 25 years of implementing Intelligent Transport Systems.

Using technology to reduce congestion and carbon emissions, increase safety and journey quality

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