The Welsh Assembly [UK]

Networked traffic monitoring in Wales

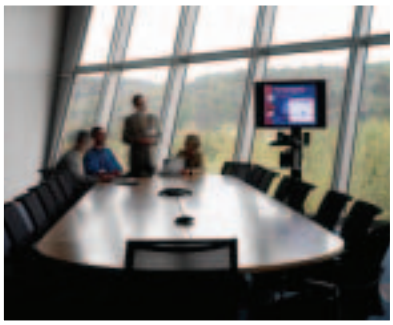
The Transport Directorate of the Welsh Assembly Government manages the trunk roads and motorways in Wales. It manages approximately 150 Km of motorway, 700 km of dual carriageway and 2000 km of trunk roads. The center is fully manned and equipped with CCTV, variable message sign systems (VMS), vehicle detection and data processing to manage the network and inform travelers using roadside signs, multimedia and the telephone.

High-end technology
The Traffic Managenet Center (TMC) includes Barco's latest technology pertaining to the visualization of large quantities of video and data on a large overview display wall. The technology had a big impact on the design of the room, which was achieved by ensuring the control room layout was designed to meet the operational needs. Atkins, the Welsh Assembly Government and Barco investigated all areas, taking valuable input from supervisors and operators, plus other parties who would have an operational impact on the room, such as the police, broadcasters, visitors, etc.

Improved efficiency
Traffic Wales operates twenty-four hours a day, seven days a week and provides proactive incident and congestion monitoring to deliver accurate dynamic traffic information. The new Welsh Traffic Management Center in Coryton, Cardiff became operational in June 2004, in synergy with The Welsh Assembly Government strategy for the provision of traveler information for Wales. The center uses Intelligent Transport Systems (ITS) to provide high-quality information and management services to travelers, which enables improved efficiency and increased safety.

BARCO

Visibly yours



The Solaris LC40 was installed in several conference rooms in the TMC

Barco's integrated solution

Technology was a major consideration in the development of the TMC; the Barco OverView display wall was an integral part of the operation. The display wall offers key features such as dual lamps for redundancy, high-resolution modules to display the video plus an Atkins-developed map, which gives a complete overview of the operational area. The display screens, which are a patented concept, have a gap of less than 0.4 mm, which gives a practically seamless view of applications on a 5.35 meter x 2.15 meter (5120 x 2048 resolution) display wall. Barco's large screen display solution provides the means to display a number of CCTV images along with associated information. The additional information includes local Teletext for traffic flashes and a map application showing incident and associated location information.

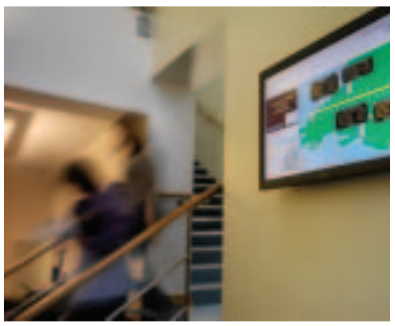
Barco's Argus graphical controller displays the TMC environment of 48 videos in real time with congestion maps, teletext, etc. Uniquely, analogue and streaming video are displayed via the Barco universal decoder card. The Argus also interfaces with other third-party systems such as the Tyco front end used as the operator CCTV interface at the TMC. The control room not only caters for the continuous operations managing the trunk road network in south Wales, but also has to incorporate the facilities for the police, broadcasters and media, which also had to be considered within the overall design. Furthermore, the need for future expansion was a major factor. The TMC also houses various other areas such as large conference rooms, dedicated police offices, and accommodation for Traffic Wales (Atkins) engineering staff who provide support for the TMC and the roadside communications infrastructure.

The new building housing the Welsh Assembly Government's Traffic Management Center

Barco OverView CDR67-DL display modules in a 4 x 2 configuration controlled by the Argus graphical controller and managed by the Apollo software.

A number of rooms contain Barco's Solaris LC40 – a 40' LCD display with a built-in PC, so information can be sent directly to the various rooms via the network. Atkins introduced a number of new technologies into the TMC environment. These included direct connectivity to the Traffic Wales Gigabit Ethernet Wide Area Network, streaming video (MPEG-2) for CCTV pictures from the roadside cameras and a voiceover IP telephone system. The voiceover IP system is now being extended to the roadside and all the new technology is combined with the pre-existing IT infrastructure, which delivers real-time congestion maps and streaming CCTV via www.traffic.wales.com

In the initial solution the CCTV images are encoded into MPEG 2 full resolution and full frame rate digital streams at a number of roadside stations.
The images are then multicast onto an ATM network for subsequent decode at the central control facility. The decoded signals are then displayed as composite analog CCTV signals onto the display wall.



The digital migration process is aimed at providing more flexibility and reducing hardware dependence. The streams are decoded within the Barco Argus graphical controller (using Barco's universal streaming decoder and scaler technology) rather than using discreet decoders and analog input modules. In this way streams from different encoder types can be selected. The Barco Apollo API isused by Tyco to manage the selection of sources and screen layouts from their standard user interface.

The Welsh Assembly facility
The construction of the facility was planned, designed and managed by Atkins. The scheme included the construction of a new building to house the Welsh Assembly Government's TMC for the M4 motorway corridor in South Wales. The Welsh Assembly's brief for the building and associated development was to provide a 'statement' building of high quality, designed to achieve longevity, and built using sustainable materials with an emphasis on minimizing ecological impact. The architectural design was of high impact, taking advantage of the building's location overlooking the M4 motorway.

Air is admitted via external louvres and distributed through the under-floor void, from where it rises into the occupied space through grilles in the main access floor. Outlet air rises to a high level and is exhausted via ventilation stacks at roof level. Although simple in principle, it was necessary to modulate the ventilation rate to minimize energy use and cater for 24-hour use of the building.

This was achieved through the use of a complex series of dampers and a building management control system, which enabled the ventilation rate to be controlled at optimal levels for several scenarios. An important factor was to design the control room incorporating the large overview display technology with the operational needs of the environment, taking into account the ergonomic needs.

Barco Control Rooms - Belgium
Noordlaan 5, 8520 Kuurne
Phone (32) (56) 36-8211
E-mail sales.bcd@barco.com

Germany Phone (49) (721) 6201-0
UK Phone (44) (118) 9664611
USA Phone (1) (770) 218-3200
Brazil Phone (55) (11) 3842-1656
Japan Phone (81) (3) 5762-8720
Hong Kong Phone (852) 2397-0752

Ref. no. R599831 May '05

BARCO
Visibly yours