St Pancras International IP CCTV

Case Study

Controlware Communications have recently provided a leading edge IP CCTV solution for St Pancras International as part of the station's refurbishment for the High Speed 1 (HS1), the UK's biggest ever construction project, formally known as the Channel Tunnel Rail Link (CTRL). Working with the Costain, O'Rourke, Bachy and Emcor Rail (CORBER) consortium and Rail Link Engineering (RLE) Controlware provided technical design, product supply, integration, commissioning and operator training services for a new 450 camera surveillance solution.

The refurbishment and extension of St Pancras International is part of HS1, Britain's first major rail project for over a century. The lead organisation behind HS1 is London & Continental Railways. Following the completion of the 79km first section of track in 2003 the second section of HS1 extends the track a further 39km to St Pancras International at a cost of £3.3bn. The extension of the HS1 to St Pancras will make it possible to run twice the number of Eurostar trains to Paris, Brussels and Lille at peak times. When the line opens on time and within budget on 14 November 2007 high-speed connections from London to Paris will take two hours and 15 minutes and from London to Brussels in well under two hours. The increase in traffic will make St Pancras International and King's Cross next door one of Europe's busiest passenger interchanges with over 50 million passengers passing through the station each year.

Creating a safer station environment

It has always been London & Continental Railways' aim to make every station along HS 1 among the safest of all stations. Therefore to provide staff, customers and visitors to St Pancras the highest levels of reassurance, CORBER required a CCTV solution to meet the highest levels of operational functionality and resilience for recorded video images. Integration with the central Station Control System (SCS) and other security sub-systems for alarm verification, incident handling, and the provision of general management information was also highly important. The technical solution had to support 24-hour surveillance of internal and external station areas from 450 cameras in both background and real time recording modes over 31 days.

When it came to the tender stage Controlware Communications was asked to participate. As specialist suppliers of IP CCTV solutions and services with more than 25 years experience in communications networking Controlware quickly realised that an advanced solution was required to deliver the features and the level of integration CORBER required. With no existing network to work with Controlware proposed a brand new digital solution and won the contract on the basis of the technical solution, integration expertise, and the proven ability to deliver large projects successfully.

An advanced technical solution

The technical solution includes a mixture of both static and dome cameras, IP codecs, networked storage and an advanced management platform. As the leading IP Bosch Security Specialist Dealer (BSSD) for the UK, and having worked with the product range for over nine years, Controlware had no hesitation in developing a solution around Bosch products. The Bosch Security products used include Videojet 8008 and VIP-X transmission codec's, Networked Video Recording (NVR), RAID storage, and VIDOS management. Together these products form the basis of an integrated IP CCTV solution that delivers high-quality video transmission, management, and storage for St Pancras International.

Client focused approach

The St Pancras surveillance network is a large solution and as such the project is dynamic and constantly evolving. The planning, staging and preparation elements of the project took about one month but the physical installation of the solution has been timed to coincide with the opening of the station over its two phases. The first phase involved the opening of the Midland Main Line (MML) to enable fast domestic rail connections to the Midlands. Work began on the CCTV system in April 2006 and was completed in time for the reopening of the MML platforms in June 2006. The second and final phase involves the opening of the station for the Eurostar lines that will enable high speed international links to extend from Europe into London. Work for the installation and integration of the remainder of the CCTV solution has been ongoing since July 2006 and is scheduled for completion by June/July 2007 in time for the official opening on 14 November 2007.

Throughout the lifetime of the project Controlware continue to work very closely with CORBER at all levels to ensure that the extensive CCTV surveillance solution is fully integrated with other management systems including; intruder systems, electronic access control, station management and help points.

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All aspects of the project to date including product supply and services such as operator training have been delivered on time, within budget and completed to the highest standard.

Inherent flexibility

Based on IP technology St Pancras International benefits from a comprehensive surveillance solution that is highly flexible enabling video to be monitored from multiple locations. CCTV images are transmitted across a dedicated VLAN that runs over the Station Data Network (SDN). This enables any user or group with the appropriate privileges quick and easy access to live and recorded CCTV images. Surveillance is highly resilient, allowing control and monitoring functions to be managed from other locations on the network in the event of an emergency or network failure. Easy to use management tools provide users with fast access to live and recorded video while at the same time the surveillance network is scalable to support growth of cameras and storage requirements in the future. Since the system operates over IP granting new users or whole departments access to video images is a quick and easy process, it is also possible, if desired, to enable live and recorded video access to users outside the station.

With many years networking and project management experience Controlware always work closely with customers to understand and develop their exact requirements and the St Pancras project is no exception. "Each project presents its own challenges," said Matt Caine, General Manager Controlware UK. "The main thing is how you respond and work with the client to meet and in some cases exceed their expectations", explains Caine. "Integration of CCTV systems with third parties is a challenge of a different

nature that involves several companies working together and a large amount of testing to ensure everything is operating correctly especially since in many cases no integration of this type has been done before."

Operational and financial benefits

The new IP CCTV solution at St Pancras International delivers both operational and financial benefits as well as helping to maintain the security of the station. For users access to management of multiple systems such as Access Control, CCTV, Fire, and Building Control is simplified through use of a single common interface. This not only saves time operationally providing users with all the information they need at their fingertips but it also reduces training costs since each user only needs to be trained on a single system.

There has also been a great deal of work interconnecting each system independently. This means that the CCTV network knows when an alarm has been generated on another system, for example when and where someone has triggered an emergency button at a help point. Once alerted the IP CCTV solution is automatically aware of the alarm and can react to it by initiating cameras to cover incidents and prompting high quality recording to capture video and audio. This intelligent automation ensures that the IP CCTV network can react to incidents as they happen, bringing situations to operators' attention immediately, thereby improving efficiency.

Since different users can access the same video from multiple points on the network, video can also help improve the role of individual departments. Station announcers for example can have access to the cameras at the platforms allowing them to make announcements based on what they see i.e. if they see that the crowds are too large, or someone is too close to the track, they are able to react quickly to situations as they happen. It also enables them to accurately announce when the trains arrive or depart since they can see what is happening at the platform more clearly. As the system evolves, it is almost certain that other operational benefits will emerge as users become more familiar with the system.

The new surveillance solution improves security and safety for passengers, customers, visitors and staff throughout St Pancras International and as new technologies become available, it is expected that Controlware will work to integrate these technologies to ensure that the network remains as effective as possible now and in the future.

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