Centralised Image Recording

Site:
Various Transport Interchanges

Client:
Transport Infrastructure operator

Project Completed:
2007

Business unit:
ADT Security Integrated Systems

Closed Circuit Television (CCTV) video surveillance of transport interchanges has been a key component of public risk management and security strategy for many years. Video cameras provide passengers with an additional level of safety - security personnel can see what is going on in remote locations and respond appropriately. Video images are also stored for later incident analysis.

ADT Security has been a long term partner of one of Australia's most complex transport infrastructure operators, providing advanced and robust video surveillance and other security solutions throughout their network.

always looking to improve

Continual review and evaluation of systems is necessary to find ways to increase vigilance and raise the level of safety provided to the travelling public. Managers also look at incidents from around the world to see what can be learnt and how to further improve safety and security systems within their operations.

A risk assessment of transport interchanges identified a need to store video footage off-site. It was recognised that a catastrophic event at an interchange, such as an explosion or large scale fire, could destroy video images stored at the site. This loss would prevent analysis of the events leading up to the incident and impede investigation of the causes.

a custom designed solution

A new facility was commissioned to record images from over 1100 cameras (more are constantly being added) across 12 interchanges. Developing a capacity to transmit and store such large amounts of data presents a significant technical challenge – a challenge that ADT Security were well placed to overcome.

FACT:
The way the ADT Security systems handles so many data feeds is highly efficient – there is negligible impact on the overall data network

ADT Security's team of experts investigated the client's requirements and the constraints the system had to work within. A number of options were investigated and various solutions proposed. When the benefits and limitations of each were considered, the favoured solution was a system of parallel image recording. This would maintain data recording at each interchange in the event of a network outage, but also build in data redundancy as images are also stored in a secure remote location.

Video images are still easily accessible at the existing security locations for monitoring or investigating local incidents, but the client now has the confidence that if a major event results in these images being lost, they can be rapidly retrieved from the central image repository. Redundant access points to the stored video have also been catered for.

a complex and challenging initiative

The parallel recording system stores video at a reduced frame-rate in real time – from all cameras – without any lost footage. Images are stored 24/7 and held for longer than 30 days.

Streaming over 1100 video links over a Wide Area Network (WAN) that carries significant amounts of other data (transport running information, voice announcements, etc) is technically difficult.

ADT Security's advanced streaming technique separates the video encoding process from the recording and storage processes, allowing video data to be transferred over the network in real time.

The system is based on the MPEG4 encoding system – currently one of the best encoding algorithms for low band width and low frame rate. It is well suited to this type of application. The recording and storage functions use commercial off-the-shelf RAID5 hard disk drives to provide for easy future expansion and wide ranging compatibility.

Significant testing and fine tuning of various parameters has resulted in ultra fast transmission without degradation in network performance. Given sufficient bandwidth, there is no limit to the number of video feeds that can be handled by the system.

a complete record of all incidents

The end result for this significant transport infrastructure client is a full data redundancy capability for all video images within the busy underground stations. It now has confidence that, even in the worst of circumstances, effective incident management and analysis will be possible.

FACT:
Whatever the eventuality, there is a reliable record of all incidents and the events that led to them - an important pillar in effective security and management systems.

Contact Us

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