# Crime-fighting with IP video

The use of camera surveillance to reduce crime is well-established in cities like Johannesburg and Cape Town where it has proven effective, although generally considered to be a relatively expensive exercise.

Modern camera technology, however, and in particular the rapid development in IP Video, are making smaller-scale projects in smaller towns viable.

Msukaligwa Municipality (formerly Ermelo), faced with escalating crime in the Central Business District (CBD), recently commissioned a camera surveillance system in conjunction with Ermelo Business Against Crime as a Public Safety project designed to make the streets safer, protect the interests of local business and promote tourism. The project was carried out by four companies: Business Connexion Mpumalanga managed the project, with system design and implementation by Shop 4 Security, installed by NorwaySA, Protect Your Own and electrical work by Dimag Electrical.

The initial crime prevention proposal was submitted to Msukaligwa Municipality in October 2005 and approved in May 2006. Tenders were invited from local suppliers where local support, integration with existing infrastructure and price were the main selection criteria. A first phase was a pilot with one camera to demonstrate video streaming across wireless links and establish the data rates that could be supported.

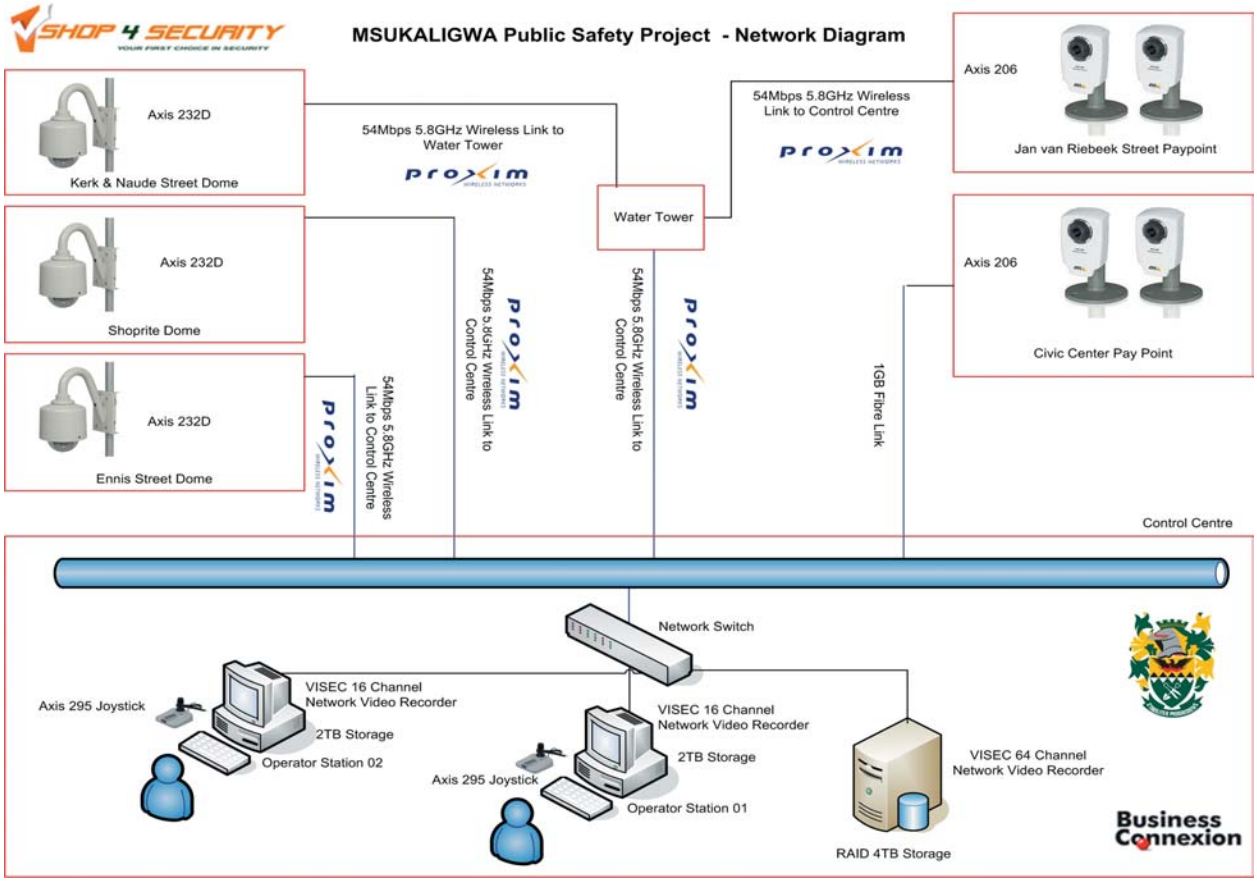
The system was modelled on camera surveillance deployed in London (UK). It is designed to provide high-quality monitoring of the CBD day and night, and to be readily upgradeable as funds became available to add cameras and expand the area monitored. Cameras are linked primarily via a 54 Mbps 5,8 GHz wireless infrastructure to a central control room. The control room, in a fine example of public/private partnership, is manned by personnel from SAPS, private security firms, the Fire Station, and the Brug-B Farm Watch. The cameras are located on private business properties, and the control room is in government offices. The wireless infrastructure will be extended to farms, businesses and private homes throughout Msukaligwa to allow them to be monitored in the control centre, which will be expanded as demand grows. Local businesses are purchasing cameras and contributing them to the project.

**Bheki Vilakazi, Executive Mayor of Msukaligwa Municipality; Roy Alves, Axis South Africa; Rupert Nieuwenhuis, Protect Your Own**

The system currently comprises three Axis 232D+ day/night dome cameras in the CBD to provide 360° coverage and 18x optical zoom, and four Axis 206/207 fixed cameras at other locations monitoring pay points. Another four Axis 211 fixed cameras are to follow shortly, as well as a further five Axis 232D+ dome cameras. The dome cameras, controlled by Axis 295 joysticks, can deliver video images down to 0,005 lux, producing clear images by available light under virtually all circumstances.

The control centre systems run on standard Microsoft Windows XP. All the video data is stored on a central server running VISEC 64-channel Network Video Recording software, and also on two operator stations equipped with VISEC 16-channel NVR software acting as backups. The main server has 12 TB of RAID storage, expandable to 84 TB, and the workstations each have their own 2 TB storage.

"Using IP video rather than traditional analogue CCTV gave us more flexibility and simplified integration with the current network infrastructure in the Msukaligwa Municipality," says Retief Bezuidenhout of Shop 4 Security. "It also gives you long-range transmission of video without image degradation. Where we wanted to use




analogue monitors, we used Axis 292 video decoders. Working with a supplier with a comprehensive range of the most advanced IP video devices made for a relatively simple implementation of a state-of-the-art solution."

Roy Alves, country manager of *Axis South Africa*, comments: "IP video is a natural fit with the IT infrastructure in place in most private and public organisations, as this project demonstrates so well. The potential to reduce system costs, cost of ownership, and time to implement is inherent in the technology: commodity servers and storage, standard networking components and being able to leverage existing infrastructure are all strong factors in favour of IP video."

Operators in the control centre each have a video wall with four 27″ LCD monitors, and two 19″ LCD monitors for hot views and system console use. Images are streamed using MPEG-4 with 20% compression at 24 fps. Testing showed that two permanent streams per camera could be supported: one to the main recording server and one to an operator.

The SAPS in Msukaligwa have committed themselves fully to the project, which is already showing results: after the first two weeks of full-time monitoring crime in the areas under surveillance has dropped by 30%. Apart from the obvious benefits from the reduction in crime, the public perception of the area and of the SAPS has improved significantly. The project managers are in the process of getting final approval from the Department of Justice and the local magistrates for the video footage to be admissible in a court of law. Once this is finalised they will be able to pass video footage on to magistrates and state prosecutors.

The project is seen as an example for the region with more towns expected to follow, and there are discussions under way to expand it to include the national roads monitoring and management objectives.

*For details contact Axis Communications SA.*

## Thermal surveillance

The ThermoVision Integration Series (TVIS-14) is a thermal surveillance camera system designed to fit within the physical constraints of the Pelco EH2508 series environmental enclosure. The system is ideal for in-plant surveillance, perimeter monitoring, high-value asset protection, border security and critical infrastructure applications.

Unlike conventional cameras, the TVIS-14 requires no lighting that may draw attention to your facilities. Thermal imaging provides vivid, high-contrast video of intruders, even when hidden by obscurants such as fog, smoke and in total darkness. The *Flir* range sees subtle differences in temperatures using a highly sensitive thermal imager.

Flir's imagers can be configured for portable use and fit into most existing CCTV networks with no custom software required.

Flir's range of security thermal cameras is distributed by *Timeless Technologies.*

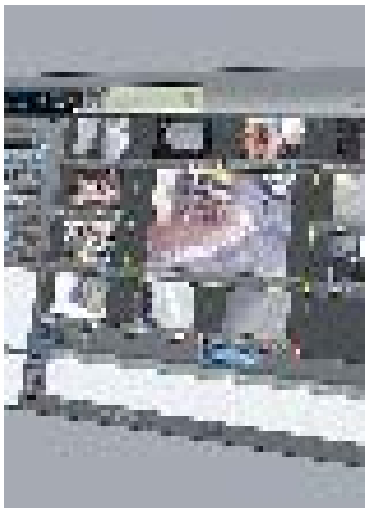
*For details contact Timeless Technologies.*

## Megapixel camera dynamite

The Axis 207MW from *Axis Communications* packs a lot into a very small package: it is the smallest wireless megapixel camera in the world. In an 85 x 55 x 40 mm package (excluding antenna), Axis delivers a 1,3 Mpixel camera with 1280x1024 resolution, 802.11g wireless with WEP, WPA and WPA2 security, Ethernet, and all the other features you expect from Axis: built-in web server, simultaneous MPEG-4 and Motion JPEG, microphone, alarm input and digital output, and multiple protocol support.

The 207MW will operate in low light down to 2 lux. The internal processor will handle event triggering on motion, alarm input, or audio, and upload images over http, ftp or e-mail (SMTP) in either MPEG-4 or Motion JPEG, with 2 MB of pre- and post-alarm buffering. As with other members of the Axis family there is an API for integration with third-party systems (available from www.axis.com).

*For details contact Axis Communications SA.*



## E-Omnicast4-Pro

E-Omnicast4-Pro is the professional version of the Omnicast 4.0 digital IP software, a solution for organisations requiring a unified management of security video, audio and data via IP networks. It is based on a client-server architecture that enables simultaneous viewing, storage and capture of high quality, high resolutions, video, audio and data services.

As opposed to conventional DVR systems, Omnicast 4.0 does not require coaxial deployment from the cameras to the control rooms. Video and audio are captured right at the camera and transported via the IP network to multiple on- and off-site locations through a secure channel.

It supports up to 100 analogue or digital cameras. E-Omnicast is very flexible in terms of integrating with selected hardware, even legacy CCTV equipment.

*For details contact Eagle Technology.*