

MWC chooses FSO to stop crime



PAV's FSO links enable security communications in Birmingham

Free Space Optics Helps Stop Crime

Safety and security are major concerns in today's society, particularly in places such as shopping centres where many people congregate. Terrorism, robbery, theft, disorder and missing persons are all problems that can affect a city like Birmingham. A private sector initiative, Birmingham Citywatch, was founded in 1989 to try to help make the city a safer place. This project has gathered momentum and now supported by both Birmingham City Council and West Midlands Police, enabling it to provide radios and CCTV to over 1000 members.

Citywatch was one of the first organisations to use closed circuit television (CCTV) and a trunk radio communications system to reduce crime in City Centre streets. The system gives shops – as well as the police and street wardens – handheld radios to communicate potential problems and 42 colour CCTV cameras to monitor three sites: the city centre; Broad Street and the jewellery quarter; and more recently the new Bullring shopping centre. The system has been proved to be effective in preventing car crime; it helps prevent muggings and assaults; it assists the police in protecting property; and is also effective in reducing the "Ram Raiding" of shops and banks. Possibly the most striking result of the cameras and the easy communications between shops, bars and the police is the effectiveness in detecting and deterring violence which was a particular problem around bars and clubs both in the evening and late at night. With such a proven record of success, it is no surprise that other schemes both in the UK and in other European countries have been based upon the Birmingham Citywatch.

The trunk radio system at the two initial sites – the pavilions that cover the city centre, and "alpha tower" that monitored the Broad Street pubs and clubs as well as the jewellery quarter – were initially linked with an E1 38GHz microwave link. When this system failed, the company that maintained the link, Mike Weaver Communications (MWC), discovered that it would be very difficult to source a direct replacement for the 38GHz link. With a new microwave link potentially requiring a new licence to be obtained – something that can take more than a month to obtain – the company decided to evaluate other technologies that could be used, such as leased lines and Free Space Optical (FSO) links.

MWC chooses FSO to stop crime

MWC needed a technology that was reliable, offered high bandwidth and that could be deployed quickly. Another key consideration was system cost: with only a limited bandwidth required, there was an expectation that the link should not be expensive. Ideally the supplier would be UK-based, ensuring a fast turn-around for service and repair, although it was not initially expected that such technology would be available from a British company.

Leased line was rapidly discounted due to the high annual costs. FSO, however, appeared to offer the perfect solution: these links use a laser to implement a secure, high-bandwidth connection through the air, and can support any data type – voice, video or data (often called “triple play”). The links use eye-safe lasers, and do not require a licence for installation or operation. Even better, FSO is unaffected by radio interference or some of the environmental conditions such as rain that can cause problems to microwave links.

The costs for FSO were also extremely attractive. “An installed FSO link costs around half the cost of microwave,” said Mike Weaver, Managing Director of MWC.

Selecting an FSO link had one further benefit: the leading supplier of FSO links, with more systems installed than any other manufacturer is a British company – PAV Data Systems. FSO had only one disadvantage for MWC – Mike had no experience of the technology. Would the claims of easy installation and high reliability prove realistic? The only way to find out was to try!

A system was quickly dispatched. The installation went smoothly – alignment was even simpler than for a microwave system, and MWC was able to complete the installation in a matter of hours. Even better, once up and running, the link has proved significantly more reliable than the original microwave system. Soon after the first FSO link was installed, the system was expanded to include the third site – the new Bullring Centre – and PAV FSO technology was the obvious choice given the flawless operating record of the first link. In the first three months of operation this second link has also performed perfectly.



PAV's FSO links installed in Birmingham

“FSO is a reliable, mature technology that provides an excellent solution for the 3km hops we typically see in our installation,” said Mike. “By using PAV’s links, I can install multi-site trunk radio systems that previously were prohibitively expensive due to the cost of a microwave link.”