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free space optical solutions

Council cuts communications costs with FSO

PAV Free Space Optics

USL

East Staffordshire Borough Council and Upper System Limited

East Staffordshire Borough Council (ESBC) needed to find a fast, reliable yet cost-effective link to improve the network connections between two major office buildings in Burton-on-Trent,

As with most local authorities, ESBC's computing facilities are distributed across many sites. The main administrative functions are located in a former Grain Warehouse, which houses around 200 users, but the servers are centralised in the Town Hall. A kilostream link connected the two sites, but, as the volume of network traffic grew, the Council's IT team had to find the best means of increasing the bandwidth to support demand.

The distance between the two buildings is around 800 metres, and there are two main roads and several buildings between them. ESBC investigated the feasibility of a fibre optic connection, but the cost and timescales of obtaining the necessary planning permission and digging up roads were prohibitive. Other BT leased line options overcame the physical problems, but there was a lengthy lead time for delivery, and the costs were high.

At this stage, ESBC decided to approach Upper System Limited (USL). "We have a long-standing relationship with USL, who have supplied most of our networking and cabling solutions since 1993," says Jason Barrett, Network Manager at ESBC. "They provide a very professional service from the initial quotation through to installation and maintenance, and they always deliver on time and to budget. It made sense to approach them to help us with this problem."

"The total cost of purchasing the PAV Laser Link outright and the first year's maintenance was less than the annual rental price of a BT Leased Line." **says Jason Barrett, Network Manager at ESBC.**

After investigating the physical constraints and calculating the bandwidth needed, USL consultants recommended the installation of a 10 megabit Free Space Optics (FSO) laser link from PAV. As well as being quick and easy to install, the system is also very cost-effective. "The total cost of purchasing the PAV FSO system outright and the first year's maintenance was less than the annual rental price of a BT leased line," reports Jason.

Installation was completed within two working days without disruption to users. One unit is located on a small services building on the roof of the Town Hall, out of sight from the road to avoid any unsightliness. Aesthetics were an even bigger consideration at the Grain Warehouse, which is a Listed Building. USL mounted the unit within a hoist at the top of the building.

"The PAV FSO link is extremely reliable and trouble-free," states Jason Barrett. "Since it was installed in 1998, we have only had to call out the PAV engineers once to replace a power supply unit, and they responded very quickly and professionally."

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The initial 10 megabit system has since been upgraded to a 100 megabit FSO laser link to address the growth in traffic caused by increased use of desktop applications – a very straightforward process as the upgrade simply involved swapping a modular hardware unit.

Gigabit Upgrade

Jason is now working with USL to plan the introduction of a new PAVLight laser link to a third location, which will provide a triangular failover set-up over a 1 gigabit link. The PAVLight version consists of a head unit, placed at the transmission point, powered by a rack-mounted unit that is typically located in the communications server room. As no power supply is needed near the head, the cost of installation is even lower, and the accessibility of the power unit makes it easier to monitor system status and maintain the system. The unit can be attached to an uninterrupted power supply system to avoid loss of service during power cuts.

This upgrade to 1 gigabit will make the PAV FSO link even more cost-effective when compared with competitive systems. The outright purchase cost is only 25% of the annual rental price quoted for the equivalent BT system. USL will complete the installation within three days and normal service to the users will be maintained throughout. "The USL team knows our set-up very well and they are very responsive to our needs," says Jason.

"The PAV FSO laser link is the ideal solution for us," summarises Jason. "It is easy to install and very reliable, yet the total cost of ownership is low. The ability to upgrade quickly and cost-effectively as we change or expand makes it very flexible, addressing our needs both now and into the future."

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