

Sheffield City Council



Client: Sheffield City Council



Company Profile:

Sheffield City Council provides approximately 550 services to its citizens. It is also a major employer in the city, with more than 18,000 employees.

Powergroup installed and manage a resilient LDSL network over which Sheffield City Council use to communicate with 100 sets of traffic lights and junctions within the city centre.

This article originally appeared in the April 2009 edition of Traffic Engineering & Control

"The project went out to tender in April 2008 and was let in June. The bulk of the installation took place over a four month period - an extremely tight deadline."

Brent Collier of Sheffield City Council

The big switchover is under way in Sheffield. The equipment is all in place and one by one, the city's junctions are switching from analogue to digital in a major programme that will see some 350 junctions under UTC control using the latest TCP/IP communications technology.

Brent Collier of Sheffield City Council, who has overseen the deployment, explains that rather than putting all their eggs in one basket, the city has selected three main routes for their comms upgrade, fibre, DSL and wireless mesh. The fibre alternative has come about as a result of SWISS, the Sheffield Wide Image Switching System. SWISS was developed with funding from the Home Office as part of Sheffield's crime and disorder reduction partnership and brings together the various providers involved in the deployment of a comprehensive CCTV system throughout the city. Central to the system is fibre optic cabling which has been installed along the entire SuperTram route and provides the UTC connections to the traffic control centre. There are 77 junctions on the Supertram route and every one of them is equipped with IP communications via the fibre network.

For both the Council and Supertram this is a win win situation, says Brent. 'We are moving over to reliable high capacity fibre communications provided by Supertram using outstation equipment provided by the Council. We are both saving the cost of analogue communications which we used to share. There will be a cost to maintain the network but we expect this to be small. Basically the fibre runs itself, and it is very cheap to maintain because it uses standard equipment and mainstream computer technology. You don't need special kit.'

Case Study - Sheffield City Council

Switching over has been made easier by Peek, says Brent, who developed an ingenious modem card which would allow the new Chameleon outstations to connect to the old analogue system, which could then be swapped onto the fibre or other TCPIIP communications when these became available. Using European funding which came via the South Yorkshire ITS programme, some 235 Chameleon outstations have been purchased and installed and Sheffield has another 80 in stock. This approach has allowed the new outstations to be deployed one at a time avoiding a big bang swap over.

'We still had a few point-to-point circuits with outstation equipment that went back 25 years', says Brent. These circuits would have been difficult to emulate so for practical purposes we have just ignored them and will install the IP communications at the same time as we install the Chameleons. But for the other 235 sites, it is simply a matter of going round to each site, plugging in a handset, typing an IP address and swapping over. At that point the copper wire becomes redundant and we start to save money. Apart from a final bit of snagging, the fibre network, with about a total of 100 junctions and pelicans, is now complete.'

LDSL from Powergroup

Where there is no fibre Sheffield have opted to use Leased DSL (LDSL) for backhaul connection to the control centre branching off with wireless mesh to neighbouring line of sight junctions. In terms of performance, the LDSL is not dissimilar to home broadband but because Sheffield wanted a secure, managed service they went out to tender last year for a LDSL managed service. **This was won by Powergroup who had been involved in an earlier trial in Sheffield. The mesh contract went to IDT who had previously worked on the deployment of a GPRS system for Sheffield's car park guidance system.**

The LDSL service uses the same copper wire that previously provided the analogue service - essentially the analogue circuits are replaced with a digital circuit which provides much higher capacity. The service operate as a private broadband connection which means that it is completely secure and also outsources maintenance and support. The cost of LDSL circuits, are not massively different to the BT cost for a single analogue circuit, says Brent. The gains come, he explains, both because of the increased data capacity and because they can then branch out with mesh to adjacent junctions. 'That brings down the average cost significantly.'

Before the contract got underway Brent Collier planned which junctions could be connected by mesh and when IDT came on site, the first thing they did was a radio survey to verify that they could get reliable communications to these junctions. The survey showed that almost all of the junctions could be connected and only a handful had to be switched to LDSL communications. In total Sheffield has put in some 80 LDSL circuits which, added to those put in during the trial, brings the total to 100. Beyond that there are 126 mesh connections, some simply making a single connection, others hopping to three or four sites.

Average all this out and the savings in revenue costs will be significant, says Brent. He points out that communications is a very competitive market and he is optimistic that over time prices will stay pretty static or even reduce, but there are other advantages in the roll out of the new network. Not only is there a lot of added functionality, the new outstations are providing an extra level of robustness in the system. 'The old BT circuits were pretty reliable but there was occasional down time. When that happened the controller would run locally. The new Chameleons can store plans and timetable base UTC plans so if communications are lost, they will run these.'

There is also spare bandwidth in the network which means that in addition to the data from the traffic controllers, all sorts of other information can be brought back to the control centre, such as data from CCTV cameras. This is important as Sheffield looks ahead to the deployment of UTMC and a range of other ITS applications.

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Contact Powergroup

To arrange an initial review of your current network, without obligation or to learn how Powergroup can help you increase productivity and reduce your communication costs: call: 01908 605188 or email: info@powergroup.co.uk



Powergroup, 249 Midsummer Boulevard,
Central Milton Keynes, MK9 1EA

T: 01908 605188 F: 01908 242099
E: info@powergroup.co.uk W: www.powergroup.co.uk

Registered in England No: 3053650
Registered Address: Norfolk House Centre,
82 Saxon Gate West, Central Milton Keynes, MK9 2DL

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