

Case studies

Papers

- [Foxes Academy Multi-site WAN based on EPS9, SHDSL and IP DSLAM](#) ^[1]

This case study highlights an innovative approach to interconnecting multiple sites within the same locality using BT's low cost EPS9 "Baseband" circuits coupled with SHDSL IP DSLAM technology (as used by "broadband" Internet Service Providers). The solution has been implemented by Foxes Academy, located in Minehead, and provides the college with reliable and secure 2.3Mbit/s data communication between its sites which share the Minehead BT exchange. The case study considers the motivation for this project, planning, equipment and installation. Of particular note is the phased implementation approach, which included a trial test phase to prove the technology for this application. Post installation performance, benefits and reliability are also assessed. Project timeframe July-December 2005

- [Coleg Harlech Extranet for Distributed Records Management and E-learning Services](#) ^[2]

This paper describes the implementation of a solution to the need for a Management Information System (MIS) database and e-learning collaboration environment for the disparate offices and teaching locations of Coleg Harlech WEA. The solution comprises enhancement of network links between the remote locations by the use of commercial ADSL Internet links together with an upgraded JANET link to the central site and the deployment of an off-site groupware server providing the FirstClass collaborative groupware system. The FirstClass system was also employed to provide an integrated user interface to the MIS database. The project was carried out over the period 2003 - 2005.

- [Cardiff University Microduct Fibre Inter-connection](#) ^[3]

This paper describes the implementation of an innovative dark fibre solution to provide inter-connectivity for three remote sites across the centre of Cardiff. The technology employed is a rapid deployment, slot-cut conduit system through which fibre optic cables are blown. The solution satisfied the need for an unlimited bandwidth inter-connection with high security, moderate capital cost and low recurrent costs. The project timeframe 2003 - 2004.

- Lauder College LearningStream WAN and IP Telephony Solution [4]

This paper describes the implementation of a LearningStream-based WAN and an IP telephony system over 14 sites across a large part of southern Scotland. The technology employed is multiple 2Mbit/s PDH copper circuits connecting back to one central hub location together with Cisco routers and a Cisco Call Manager system. The system deployed also includes integration with legacy Siemens Realitis DX PBX systems. A key feature of the implementation was the use of QoS traffic prioritisation over the WAN to support VoIP together with compression of voice sessions to enable operation over limited bandwidth WAN links. This paper considers the motivation for the project, the planning, the equipment and its installation. Post installation issues such as the performance and benefits are also assessed. The project commenced in 2001 and the final stage is ongoing.

- West Cheshire College Low Cost 2Mbit/s Connection Using 'Baseband' EPS 8 Links [5]

This paper describes the planning and implementation of a 2Mbit/s near Megastream quality link between Local Area Networks (LANs) at sites at West Cheshire College using a BT Engineering Performance Specifications 8 (EPS 8) circuit with DSL modems. The motivation for the project is described together with project planning and costing. Also included are the details of the equipment installation and commissioning. The performance and reliability as experienced in practice over a period of six months are discussed. A brief description of the use of the link is provided, highlighting how previously unusable applications are now being fully utilised, demonstrating the benefits that the project has brought the college.

- College of North West London - Multi-technology Resilient Wide Area Network [6]

This paper describes the implementation of a multi-technology wide area network between a number of sites at the College of North West London. Technologies employed include 100Mbit/s IR laser, 802.11b WiFi and LES100 circuits together with legacy 2Mbit/s links. It considers the motivation for the project, the planning, the equipment and its installation. Post installation issues such as the performance and benefits are also assessed. The project lasted from June 2002 to September 2004.

- University of Wales, Aberystwyth - 802.11b 1km Inter-site Wireless Link [7]

This paper describes in detail the implementation of a short distance 1km 802.11b wireless connection between the Old College building and the School of Art Building at the University of Wales, Aberystwyth. Although later generations of 802.11 are now available, 802.11b systems are still being installed, offering low cost wireless solutions. The project implementation timeframe was Sept 2001 - July 2002; experience since installation has been nothing but positive.

- Loughborough College Two-Hop 802.11 Link to Remote Centre [8]

This paper describes the implementation of a long distance 11.5km wireless connection between Loughborough College and one of the college's outreach centres using 802.11 technology. It describes problems encountered in equipment selection and deployment in a non-line of sight environment, the eventual solution involving two wireless bridges. The link

has been highly successful, providing sufficient bandwidth for 30 PCs together with VoIP (Voice over IP) telephony, and has operated very reliably (99.7% availability). The project implementation timeframe was spring - summer 2001, costs in this paper relate to that period of time. Although later generations of 802.11 systems are now available, Aries 802.11b systems are still being installed, offering low cost wireless solutions. This case study looks at the issues involved in planning and implementation, and assesses the long-term experiences of this technology.

- Loughborough College IR Laser Link to College Cyber Cafe [9]

This paper describes the implementation of a 10Mbit/s IR (Infrared) laser link to connect Loughborough College's off-site Cyber Café to its main network. It considers the motivation for the project, the planning, the equipment and its installation. Post installation issues such as the performance and benefits are also assessed. The project was carried out in the second quarter of 2000.

- Northumbria University Cisco® Wireless Network and Citrix MetaFrame® Presentation Server System [10]

This paper describes the recently implemented hardware and software infrastructure. This combination of technologies has allowed some of the major concerns relating to wireless networks to be addressed in a highly cost effective manner, avoiding the need for specialised gateway servers and eliminating the need to rely on Wireless Encryption Protocol (WEP) as a security mechanism. The network covers two campuses in more than ten separate buildings. Nearly 70 access points were deployed, in conjunction with a central system management facility. The network supports several open access hotspots, teaching rooms, lecture theatres, an Internet café and two libraries. The system went live in September 2003.

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