

Motorola Connects Remote Campuses for Weymouth College

Weymouth, England



Customer

Weymouth College was founded in 1864 and today enrolls more than 7,000 students from the United Kingdom and around the world. Located in Southwest England, Weymouth College's main campus is in Weymouth with satellite campuses in Dorchester, Colwell and Portland. It offers comprehensive educational programs in multiple areas of study, and leverages advanced technologies to enable campus-to-campus collaboration and distance-learning programs.

Solution Provider

Macs Communications Limited (Macscoms) is one of the UK's leading wireless voice and data specialists. Through alliances with the top wireless equipment manufacturers and in-house technical expertise, the company is able to provide best-of-breed design, implementation and support services to both the corporate and public sectors. Macscoms has successfully deployed hundreds of networks across the UK and has received accreditations from the computer industry's leading manufacturers, enabling it to design and implement the custom solutions that best fit each customer's requirements.

The Situation and Challenge

Weymouth College was in need of more bandwidth and faster connections between its main campus in Weymouth and its satellite campuses in Dorchester, Colwell and Portland for administrative and distance-learning applications. At distances of up to 6.2 miles (nearly 10 km) away, the College was connecting five buildings on these campuses via Telco LES circuits that delivered 2 Mbps of throughput. With new, higher-bandwidth applications and more and more traffic passing over the lines, the College required connections with higher throughput to speed communication between the sites.

The cost of increasing LES circuits was prohibitive. Further, there was the likelihood that several of the remote campuses would be re-locating, so reconnecting via leased-line connectivity would have been complex and required expensive set-up charges. Wireless seemed like the logical choice.

However, there was considerable distance between each location with buildings, trees and terrain obstructing clear line-of-sight; and the link to Portland would need to connect over a large stretch of open sea. Conventional point-to-point broadband wireless platforms were unable to complete the links without investing in large towers and heavy-duty antennas.

“The challenge with this deployment was to use wireless to meet the availability standards of the Telco line circuits while significantly improving performance – all for the same or less cost. The PTP 400 Series was the only solution that could provide the robust network capabilities for the right cost; other solutions would have required additional expenses including tower construction, more links to complete the connection, and more time to install and maintain. The customer is very pleased.”

~ Stephen McKeown, Managing Director, Macs Communications Limited

Technical Requirements

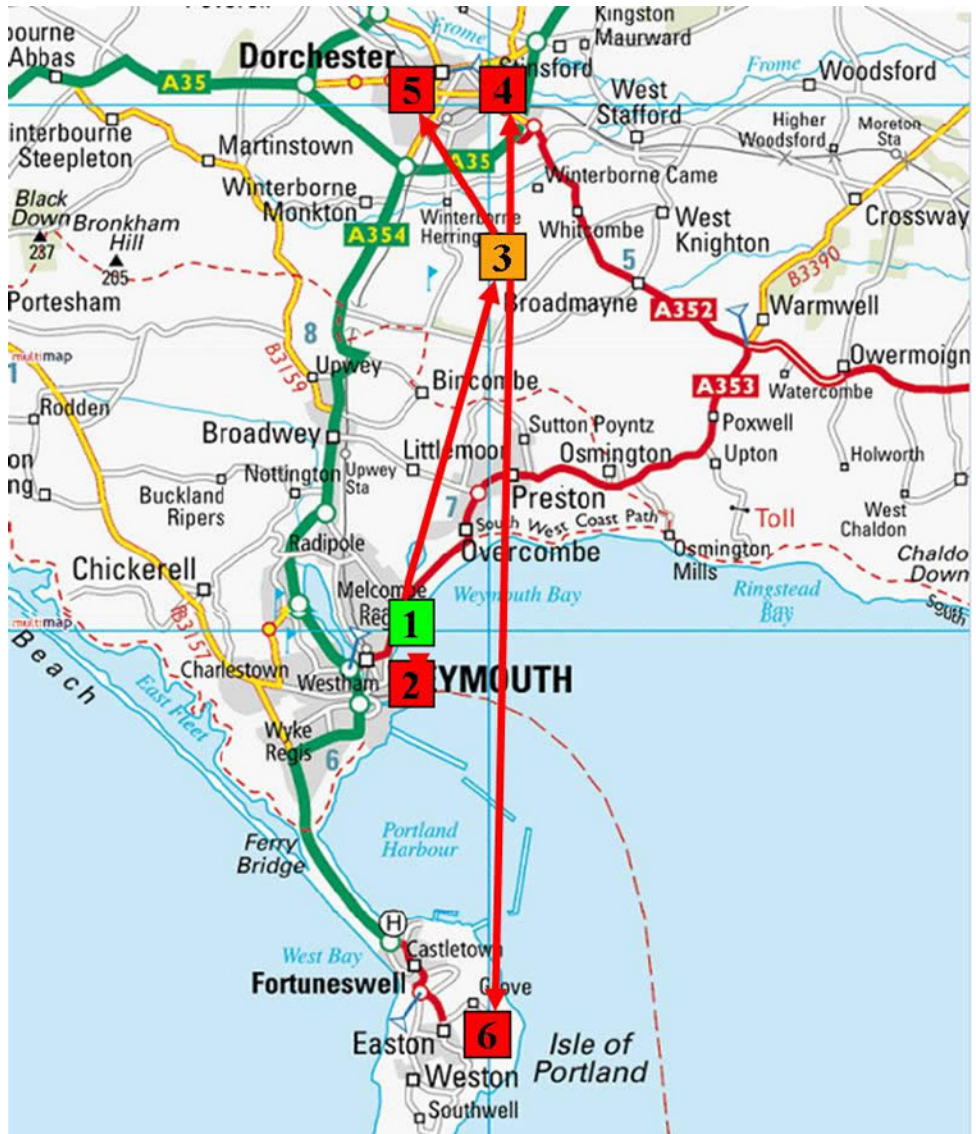
- At least double the amount of bandwidth between each site
- Easy operation and maintenance by the Weymouth College IT staff, who needed full control of the wide area network (WAN)
- Carrier-grade connectivity, without exception, around obstacles and over a large body of water
- High security
- Flexibility, allowing re-location as needed

Deployment Detail and Interoperability

Macscoms connected the five sites by replacing the Telco LES circuits with five Motorola Point-to-Point Wireless Ethernet Bridges – 400 Series with integrated antennas. As depicted in the map, Macscoms used a staging point at a central location at High Aston Farm (#3) through which all sites are connected. The Dorchester Computer Centre (#5), Asquith House (#4), Weymouth College (#1) and the Portland Computer Centre (#6) connect directly to the High Aston Farm staging point at distances ranging from 1.3 miles (2.1 km) to 8.7 miles (14 km). The Colwell Centre (#2) connects directly to the main Weymouth College campus to access the network.

Macscoms used all Motorola PTP 400 Series platforms with integrated antennas for time-saving ease-of-installation. The platforms also offer ease-of-use, especially important as the network is to be maintained by the Weymouth College IT staff, not wireless experts. No towers or large antennae were required; the PTP 400 Series units were installed on TV mast-type poles.

The public network was accessed through a 2 Mbps connection into the Weymouth College site. On either end of each point-to-point wireless connection, the PTP 400 Series unit interfaced with a Cisco router and an Ethernet switch.



At the time of this installation, the products deployed were the Orthogon Systems OS-Gemini point-to-point wireless Ethernet bridges. With Motorola’s acquisition of Orthogon Systems, the OS-Gemini products were renamed as the PTP 400 Series bridges. They are now part of Motorola’s **MOTOwi4™** portfolio of innovative wireless broadband solutions that create, complement and complete IP networks. Delivering IP coverage to virtually all spaces, the **MOTOwi4** portfolio includes Fixed Broadband, WiMAX, Mesh and Broadband-over-Powerline solutions for private and public networks.

MOTOwi4™

The Results

The Motorola PTP 400 Series solution provided a private, high-bandwidth, carrier-grade network that created an extended LAN environment between five remote sites with the flexibility to move the network when any of the sites relocated. Macscoms had the wireless links up and running in a matter of days, providing 99.999% availability across paths obstructed by trees, buildings and open terrain.

The throughput between each site either doubled to 4 Mbps or quadrupled to 8 Mbps. With future software upgrades regularly planned by Motorola, and at no extra charge to the customer, performance will be consistently increased – growing with Weymouth College's needs. This higher-bandwidth solution has brought significantly more value to Weymouth College at less cost than the Telco LES solution. Weymouth College estimates a savings of approximately \$57,950 US (\$45,624 Euro) over the next three years.

The network enables several new applications, including streaming video from IP cameras on remote campus locations back to the main campus site. Although not presently deploying voice-over-IP (VoIP), the PTP 400 Series platform provides the network infrastructure to leverage intra-campus IP voice for further cost-savings.

Why Motorola?

- Motorola delivered significantly more throughput for slightly less cost
- The Motorola PTP 400 Series solution was the only broadband wireless platform that could provide a carrier-grade connection in the non-line-of-sight (NLoS) environment and over a large body of water
- Complete installation took only days and did not require towers or large antennas
- The Motorola was the only platform that provided the flexibility to relocate the network

Why Macscoms?

- Macscoms was the only solution provider with the wireless expertise necessary to architect a carrier-grade, high-performance solution in this environment
- Macscoms offered a complete service, from site survey to installation, maintenance and comprehensive training so that the network could be maintained by the College
- Macscoms offered only products that were rigorously tested and proven internally first
- Macscoms designed a solution that passed on considerable savings to the College

About Motorola

Motorola is known around the world for innovation and leadership in wireless and broadband communications. Inspired by our vision of Seamless Mobility, the people of Motorola are committed to helping you get and stay connected simply and seamlessly to the people, information, and entertainment that you want and need. We do this by designing and delivering "must have" products, "must do" experiences and powerful networks – along with a full complement of support services. A Fortune 100 company with global presence and impact, Motorola had sales of US \$36.8 billion in 2005. For more information about our point-to-point products and services, visit our website at www.motorola.com/ptp.



For more information about the Motorola Point-to-Point Solutions:
Outside of North America: +44 1364 655500
In North America: +1 877 515-0400
www.motorola.com/ptp