

Motorola Wireless Deployed for Texas University Distance-Learning Network

Dallas, Texas



Customer

Texas A&M University was the first public institution of higher education in the state of Texas, and has since evolved into one of the largest systems of higher education in the nation. Through a statewide network of nine universities, seven state agencies and a comprehensive health science center, the A&M System educates nearly 100,000 students and reaches another 11 million people through service each year.

Solution Provider

DS3 Computing Solutions (DS3) is one of the leading educational and government systems integrators in the state of Texas. Located in Dallas, DS3 offers a comprehensive suite of network, wireless, web and telephony solutions.

The Situation and Challenge

Texas A&M in Kingsville needed a cost-effective, high-quality, easy-to-operate videoconferencing and distance-learning infrastructure for communities in the South Texas region. The institution called upon DS3 to connect the Kingsville campus to 24 school districts in Southeast Texas, spanning an area of 235 miles (378 km).

Although all of the school districts had Internet service, none had videoconferencing capability because bandwidth was limited and connectivity in the region was slow. Wireless links between the school districts and Texas A&M's three

primary sites, including the Kingsville hub, would have to be provided through a series of communication towers situated in rural locations, with no existing infrastructure to support this application.

High bandwidth and fast throughput to handle heavy volumes of video traffic were primary needs. The University also needed 24/7 network availability, which meant that carrier-class reliability had to be achieved as well. None of these objectives could be accomplished quickly and cost-effectively with landline links.

Technical Requirements

- Real-time interaction between remote users and the campus hub required high-speed links
- The bandwidth-intensive videoconferencing application required support for high-throughput links over an extended area
- Carrier-class, multipoint connections over long distances and near-line-of-sight paths had to be achieved in an area that had no existing infrastructure

Deployment Detail and Interoperability

To support the new distance-learning and videoconferencing network, DS3 recommended broadband wireless technology. They installed Motorola Point-to-Point Wireless Ethernet Bridges – 400 Series to provide 24 carrier-grade connections between the Kingsville campus and the school districts. Then the school districts used

“Key to the network’s success is the technology, planning and design engineering provided by Motorola’s PTP Wireless Group. The PTP 400 Series solution is providing highly reliable connections between the sites, was easy to install and is operating flawlessly in this environment.”

~ Davis Sylvester III, president and CEO of DS3 Computing Solutions

point-to-multipoint systems to bring them into the wireless infrastructure’s backbone with access to the entire distance-learning network. PCs, servers and videoconferencing equipment were installed in each of the districts.

The Motorola PTP 400 Series wireless bridges, with integrated two-foot (61-cm) and three-foot (91-cm) antennas, were connected to the SNMP-managed Ethernet router to provide an interface with the school district’s LAN and to provide network translation, firewalling and encryption to satisfy security needs.

In each location, the Motorola antenna cable was run indoors through a lightning protector and UPS to the Motorola PTP 400 Series platforms on the new tower locations, providing full-duplex, 10Base-T connectivity, using the 5.8 GHz band.

The Results

The network covers more than 235 miles (378 km) and connects Texas A&M’s Kingsville campus to 24 school districts in Southeast Texas using the Motorola PTP 400 Series broadband wireless solution. The carrier-class links average 25 miles (40 km) across near-line-of-sight paths, at a throughput of 15 Mbps both upstream and downstream to support two-way voice, video and data communications across the network.

This high-bandwidth, asymmetric network enables new distance-learning functionality not supported in conventional broadcast-only networks, enabling interactive communication between students, faculty and administration via online courses and videoconferencing. The network is not only used for classes, but also for University support services such as admissions, financial aid programs and non-credit workforce training for the state of Texas.

The overall project goal to provide a cost-effective, high-quality and easy-to-operate distance-learning infrastructure for communities in the South Texas region was easily accomplished, thanks to the powerful combination of Texas A&M’s vision, DS3’s networking solutions and Motorola’s carrier-grade wireless technology.

Why Motorola?

- No other broadband wireless products could deliver the throughput required for this high-speed video connection
- The interactive application required a carrier-grade link that only Motorola could deliver
- Reliable, easy-to-maintain wireless links for this challenging long-range broadband wireless network could only be satisfied by the Motorola system
- More than \$70,000 US (\$55,000 Euro) was saved in tower costs alone, thanks to Motorola’s integrated antennas

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.

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™



For more information about the Motorola Point-to-Point Solutions:

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