No More Clipboards

Network coordinator Cody Adams supervised Louisiana hospital’s move to a centralized wireless system.

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Passion inspires video network

University uses existing Category 5 cabling for simple analog television transmission.

Kurt Bartelmehs makes no bones about it—he is passionate about unshielded twisted-pair cable (UTP).

“When you have a UTP infrastructure, the sky is the limit for what you can do,” says the technologist from the University of Texas at Austin (UTA). “It can transmit voice and data, it can transmit video, and it can even be used for cable TV.”

Nearly three years ago, Bartelmehs started using UTP to deliver cable TV to 24 display systems in the Applied Computational Engineering and Sciences Building (ACES). There were skeptics and naysayers, he says, but the system has worked so well that UTA plans to install similar networks in other buildings.

ACES is UTA’s state-of-the-art, flagship facility to support interdisciplinary research in all areas related to computer technologies. This includes the school’s department of computer science, which is recognized as one of the top 10 programs of its kind in the nation. The facility is also used for graduate studies in computational science and engineering, mathematical modeling, applied mathematics, software engineering, and computer visualization.

The 176,000-square-foot building includes a 2,900-square-foot visualization lab, electronic seminar and videoconferencing rooms, and offices for visiting researchers. In addition, the structure is wired with more than 1.3 million feet of UTP CAT 5 cable, which connects 6,000 data ports for use by more than 300 graduate students and 70 faculty members.

Bartelmehs, who has been associated with the University of Texas for 11 years, designs, installs and programs integrated audio-video-control systems for classrooms and buildings, and provides technical support for a broad range of programs.

The heart of the TV system at ACES is a Lynx Video Network from Lynx Broadband. “It lets me maximize the capabilities of my UTP infrastructure by delivering additional services, like television,” Bartelmehs says. “Lynx also gives me lots of flexibility for implementing moves, adds and changes.

SIMPLE INSTALLATION

“We have tremendous interconnectivity,” he continues. “If anybody wants cable TV in their classroom, all I have to do is patch in a signal from the Lynx hub, install a converter in the classroom, and they’re good to go.” This enables faculty and students to access cable programming, as well as university channels.

Bartelmehs purchased three, 16-port Lynx video hubs and 48 Lynx single-port converters. The hubs use patented broadband baluns to convert unbalanced coaxial cable TV signals into balanced signals that travel on pair four of UTP CAT 5 cable.

The high-frequency baluns are analog devices, so nothing is digitized and the process does not tie up any bandwidth on the data network. At the point of use, an identical balun converts the cable TV signal back to coaxial form just before it enters the TV.

When ACES was constructed, a large wiring closet for the data network was placed near the center of the building. There were no plans, however, to add an audio/visual network of any kind at that time, Bartelmehs says. When the decision was made to add this capability, the cable TV signal entered the building two floors below the main wiring closet, where the Lynx hubs were located. Bartelmehs used coax to deliver the cable signal to the wiring closet, where it was amplified, then distributed to the point of use, using the Lynx/UTP network.

Bartelmehs learned about Lynx Broadband at a trade show several years ago. Shortly afterwards, he tested some Lynx equipment, as well as com-
petitive products, before selecting Lynx because its integrated hub design resulted in a cleaner installation.

“What crystallized the decision to install the Lynx network at ACES in the first place was simply the need to upgrade our system with a video network—and we had the money to do it,” Bartelmehs explains. The funds came from a private donor, but the decision to upgrade was his.

Bartelmehs installed everything himself. “The amount of time it took to do that was just a few days,” he says. “It really just drops in like you think it would.”

This year, Bartelmehs modified the system by using fiber cable to deliver TV signals directly to the main wiring closet. “Anything over fiber is as pristine as you can get,” he says. “Now that I’ve got pure fiber going right to the closet, I don’t need the amplifiers.”

“I do everything in-house,” he explains. “It’s better to build from within, because you can’t help but learn something about the new equipment. We don’t have to rely on maintenance or service agreements or local vendors to support us. We have spare equipment and put the systems together ourselves, so we know how to fix it.”

Bartelmehs estimates savings of about $4,600 because he installed the Lynx network himself. This savings includes the cost of a consultant to analyze ACES’ needs and develop a plan, and two technicians for two days to install and test the equipment.

The equipment cost approximately $7,400, including the three Lynx hubs at $850 each, 48 single port converters and 48 television sets. This does not include the cost of the UTP cabling, which was already in place at ACES.

“I currently have 24 permanent connections, but I can add a television connection into any other room in just a few minutes,” Bartelmehs offers. “Additional setups are often temporary for users who don’t want to miss a special television program.”

The biggest return on investment, he says, is the time he saves when changes need to be made. “Under normal circumstances, adding a TV involves installing coax cable and that whole process can take up to a year. Since UTP was already in place, the Lynx system was simpler, easier and less expensive.

“To hook a TV into the system, you simply use a patch panel to route the signal to the proper room, then install a Lynx converter and two patch cords (one UTP and one coax) at the point of use.

“The cost savings on the front end and the back end are immeasurable,” he adds. “The convenience is unparalleled because I don’t have to worry about pulling coax to new locations. Every location in the ACES building is now capable of receiving broadband video.”

For more information from Lynx Broadband: www.rsleads.com/510cn-255