University Uses Extron XTP Systems at Landmark Campus in Lingen

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> **Michael Stark**
> Project Manager at O&P Projektingenieure

The University of Applied Sciences of Osnabrück in Germany wanted to establish a new campus in the neighboring city of Lingen. The choice for a suitable site was limited. The city and the university came to an unusual agreement of repurposing a city landmark for the campus. Located in the heart of the city, the landmarked Royal Hanoverian Western Railway locomotive repair facility built in 1919, stood unused and empty. During renovation, the building's interior was demolished while the historic exterior was left intact. New buildings were constructed within the shell of the 13,000 square meter (140,000 square foot) facility, enabling the faculties of Management, Cultural Studies, and Technology to be centralized by the winter semester of 2012. This unique solution preserves the majesty of the façade while creating a modern higher learning environment for 1,900 students.

To ensure proper planning of maintenance groups and facility management support, the university brought in the AV consulting firm of O&P Projektingenieure and integrator Projektions-Systeme-Schmitt – PSS. The project consisted of a total of 23 single trades, which were contracted out partly for domestic companies and partly for international companies. After the nationwide open competitive bidding for the AV equipment, the university assigned PSS with its implementation. The AV team chose twisted pair solutions from Extron, as they corresponded to the most economically advantageous requirements. XTP Systems® provide signal routing within the largest spaces, and distribution and scaling products support individual seminar rooms and classrooms. "Extron had the equipment we needed, and they worked with us to create an environment that encourages collaborative learning and research at the university level," says Michael Stark, Project Manager at O&P Projektingenieure.

Extron Electronics
INTERFACING, SWITCHING AND CONTROL

The XTP System provides high performance signal switching and distribution within the divisible auditorium.

The auditorium AV system can be controlled from the front of the room or in the control room.

Landmark Preservation with High-Tech Construction

The new campus consists of ten buildings constructed within the twin steel structures of the old railway repair facility. Spaces include a divisible auditorium, seminar rooms, classrooms, fully equipped working and computer laboratories, a library, and a combination TV studio and radio station. To support multimedia presentation in these spaces, twisted pair cabling was installed throughout the facility.

The system designers selected twisted pair technology for AV signal transmission because it is an economical solution with proven reliability. Systems consisting of XTP, DTP, and other twisted pair products from Extron successfully provide signal switching and long-distance distribution of high resolution HDMI, DVI, and RGB video, audio, and RS-232 and IR control within and between the various spaces. Some areas also take advantage of the capability to send Ethernet and power over one twisted pair cable, reducing the number of runs per room and the need for local power at specific endpoints. The end result was a significant savings during installation, especially in larger rooms such as the lecture halls and the auditorium.

Divisible Auditorium

The 240-seat auditorium is designed to be configured as a single venue or as two lecture theaters of equal size. At the center of the AV system is the XTP CrossPoint 3200 matrix switcher. The modular 32x32 frame provided flexibility for current and future requirements. It is populated with a mix of input and output boards for high resolution video, audio, control, and Ethernet signal distribution. Technologies built into the XTP® line, such as EDID Minder® and SpeedSwitch®, deliver system-wide management capability and ensure high performance signal switching and distribution to all display devices, regardless of room configuration. The matrix switcher and other equipment are rack-mounted in the auditorium's control room.

Signals originate from a wide variety of digital and analog sources, with some rack-mounted in the control room and others installed within the auditorium. The room features two lecterns, and each one is outfitted with a resident desktop PC and an Extron scaler. Signals are routed to the central XTP matrix using an XTP transmitter. Embedded in each lectern's surface is a Cable Cubby 600 that provides connectivity for HDMI and VGA devices, such as another laptop or a document camera. Also, three digital PTZ cameras are mounted high on the walls to offer different views when a presentation is being streamed or recorded. An XTP T HDMI transmitter installed close to each camera extends HDMI signals from the camera and enables device control over Ethernet.

XTP R HDMI receivers are mounted above the projectors using the PMK 350 low-profile pole mount kit. Another XTP receiver installed in the lectern enables video monitoring on a Prorising VM170AD-M-GS-PM Digital Signage screen that is mounted to the lectern. Typically, audio signals are routed to the sound system and video is sent to one or more Panasonic PT-DZ770EL high resolution projectors, depending on room configuration. The receivers accept HDMI signals and RS-232 inserted through the XTP matrix switcher's Ethernet port to control the projectors and monitors. Some sources and display devices are over 600 feet (183 m) apart. To support these distances, extenders are linked through the XTP CrossPoint 3200, which effectively doubles the total transmission distance to 660 feet (200 meters).

Classrooms & Collaboration Spaces

The 30 seminar rooms, classrooms, and labs often include a desktop computer, document camera, digital or analog laptop, and one or more video playback devices. Classroom are also configured to allow connection of a personal laptop or tablet. A surface-mounted Cable Cubby 300S enclosure on the lectern offers connectivity for HDMI, DVI, VGA, and power.

^ The Cable Cubby 300S enclosure and MediaLink controller installed in the instructor's desk streamline portable device integration and AV operation.

< A majority of the AV equipment supporting the divisible auditorium is rack-mounted in the control room.

The modular design of the XTP CrossPoint 3200 provides flexibility for current and future requirements.

To enable support for this variety of sources, each room includes an Extron DVS 605 A Five Input HDCP-Compliant Scaler with Seamless Switching. This particular model was selected for its high performance AV switching capability, Deep Color processing, 1080i deinterlacing, and support of bidirectional RS-232 control. Extron DTP HDMI extenders provide signal delivery from the video scaler to the room's projection system. The transmitter is installed at the output of the scaler, and the receiver is mounted with the projector. Device control is sent through the receiver's RS-232/IR port. The instructor can control the entire system using a lectern-mounted MLC 226 IP AAP MediaLink® Controller. In rooms with more than three HDMI sources, an SW2 HDMI switcher provides signal switching to the scaler.

The DVS 605 A scaler is also used to distribute audio signals, providing audio-switching with automatic lip sync compensation for video processing delay, HDMI audio embedding and de-embedding, and the capability to adjust gain and attenuation for each analog input.

Audio signals are then sent to an Extron MPA 152 Plus stereo amplifier with patented Class D ripple suppression technology for distribution to SI 28 Two-Way Surface Mount Speakers with 8" Woofer. The included mounting hardware helped streamline installation. "The V-Lock wall bracket made installing the many speakers quick and easy, and the university appreciates the theft deterrence of a locking system," says Michael Albrecht of PSS.

Results

The MTS facility was scheduled to open at the beginning of September, 2012. Installation of the AV systems began in July 2012, leaving a very short period for AV systems integration. Commissioning was complete in time for the first day of instruction. The consultant and integrator report that their client is pleased with the reliability and speed of the presentation systems. According to University representatives, the applications are an integral part of providing the optimal conditions for students to learn and do research together at Campus Lingen.