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Münster University of Applied Sciences – MUAS is the fourth largest higher education institute in Germany and is recognized as one of the top schools for practical education and research in the country. To support the needs of the Faculties of Chemical, Electrical, Computer Science, Mechanical, and Environment Engineering at the Steinfurt campus, MUAS built a combination auditorium and lecture hall facility, identified as the Audimax, with multiple divisible spaces. The innovative architecture of the building required an extremely flexible presentation system. MUAS worked with local integrator, Faircom Media GMBH, to design the Audimax AV system using Extron XTP Systems®, TouchLink® touchpanels, and SME 100 HD streaming encoders.

“We’d been successfully installing Extron equipment at MUAS for years so we were already familiar with the high quality and reliability of their products,” says Stephan Bergmann, Project Manager at Faircom Media GMBH. “Extron’s XTP System, TouchLink panels, and SME encoders had the capabilities and flexibility we needed in the university’s new Audimax facility.”

Audimax Design
The MUAS Audimax is a 5,016 square-foot (466 square-meter) building with two equal spaces that can be subdivided into as many as five distinct presentation areas of two auditoriums, two seminar rooms, and a lecture room. An eight-meter high movable wall that divides the auditorium space is designed to drop as a single piece into the floor, providing seating for up to 200. Similar construction allows the lecture and seminar rooms to be combined into one or two presentation spaces.
Extron XTP Systems and SME Streaming Encoders Provide Exceptional Flexibility at MUAS

One Extron XTP CrossPoint matrix switcher provides AV signal switching and distribution for all divisible spaces within the Audimax, regardless of building configuration.

Seminar side of the building can also function as a reception area and lounge for the auditorium, displaying presentation content on one screen and the speaker on the other.

In an elevated area at the back of the divisible auditorium is the building’s Technical Room, with system operator workstations and the rack-mounted XTP CrossPoint, sound and control systems, and a satellite receiver with HDMI output.

Routing of Any Input to Any Output with XTP System

The main requirement for the Audimax was to have independent presentation in any space or room combination. Seven Panasonic® PT-DZ110 DLP projectors are installed in such a way as to allow two projection systems to support each auditorium and seminar room and one screen in the lecture room. In each room arrangement, the same presentation can be distributed to all display devices or different content can be sent to the individual destinations. To provide this flexibility, the AV system is designed around the Extron XTP CrossPoint 3200 modular matrix switcher. It is configured as 20x20 to support local and remote equipment, and the remaining six slots are reserved for future system growth. According to the integrator, this HDCP-compliant system was selected for its proven high-speed switching and built-in capabilities such as EDID management and advanced system monitoring.

Each seminar and auditorium space features a lectern connected to a floor box via CAT 7 twisted pair cable, and includes a fixed computer tower with a local monitor and keyboard. Lecterns on the auditorium side of the building also provide a visualizer or document camera and an interactive smart touch screen for annotation purposes. XTP transmitters are installed with the computers to provide AV and control signal extension to the matrix switcher. An Extron XTP SR HDMI scaling receiver is mounted with each projector to ensure content is displayed at the appropriate resolution. All XTP transmitters and receivers are powered remotely by the XTP CrossPoint® matrix switcher, which saved installation time and reduced labor costs.

Extron TLP 350CV Cable Cubby enclosures with built-in 3.5” touchpanel offer AV connectivity and provide system control from the front of the room in auditorium and seminar spaces. In the smaller lecture room, an MLC 104 IP MediaLink® Controller with Ethernet Control is mounted in a surface-mount box that includes a five-meter cable. This option allows the controller to be placed on the instructor table when the space is used as a separate room. An XTP T USW 103 three-input transmitter is installed in each lectern and beneath the lecture room table to allow selection of a local source or connected device such as a laptop.

AV devices attached to XTP transmitters and receivers can also be controlled from the Technical Room. The rack-mounted control system includes the Extron IPCP 505 IP Link® control processor, which provides simultaneous two-way device control and monitoring from an embedded Web server. Bidirectional RS-232 signals from the control system are inserted via the Ethernet port of the XTP CrossPoint matrix switcher for transmission to system endpoints.

The provided XTP System software helped simplify system setup and configuration, and it is now used to monitor the enterprise-wide installation as well as provide presentation control from the Technical Room, if requested. Offering a complete view of the matrix switcher and
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In addition to AV system setup, XTP System Configuration Software provides continuous real-time system monitoring and control of all XTP endpoints. remote endpoints, the XTP System Configuration Software provides AV system monitoring and presentation control from the Technical Room.

The AV system includes five DMP 64 audio digital matrix processors used to route audio signals from the computers and wireless microphones. This processor model was selected for its feedback suppression and other configurable features that help ensure high quality sound regardless of room size. The Extron DSP Configurator™ software simplified setup, configuration, and control of the audio. The University IT staff reported that the software’s graphical interface was quite easy to understand and operate. They had a clear view of signal paths and were able to adjust input levels from a single window.

Presentation Flexibility with SME 100 HD Encoders

In overflow situations, sessions held within the Audimax can be streamed to adjacent rooms or across campus. Sony High-Definition EVI HD1 Pan/Tilt/Zoom cameras in the divisible auditorium capture live events, and a mobile cart with another camera provides session streaming from within any space. This design enables safe observation from within the Audimax of advanced chemistry and environmental experiments performed in remote labs. Streamed lectures and lab sessions are also being archived for eventual video-on-demand use.

To provide dual streaming of presentation content and camera feeds with different resolutions and bit rates, two SME 100 HD H.264 streaming media encoders are mounted in the cart. One stream is extended to remote locations for live presentation, and the second stream is sent to a media server to be recorded for archival purposes. The SME 100 HD was selected because it offered high performance signal processing and optimization of video and computer graphic input, an integrated three-input AV switcher with buffered loop-throughs, and user control of video resolution and bit rates. The cart includes two DVS 605 A seamless switchers that provide picture-in-picture images for the encoders, enabling unrestricted two-window display of standard definition and high resolution digital and analog video from the diverse sources. The switchers are also used for embedding/de-embedding of audio signals and enhanced AV control. According to Bergmann, the team appreciated the ability to save control settings into presets, which streamlined setup. Constant demand for the streaming cart has led to a second cart being readied for service.

Results

For the grand opening of the Audimax at the 2013 Campus Fest, the dividing wall in the auditorium space was dropped and the seminar side of the building was converted into a lounge. Guests were able to enjoy refreshments while observing the opening ceremony held in the auditorium on one screen and watching a campus highlights video on the other screens.

The Audimax’s configurable presentation spaces are in regular use. According to Bergmann of Faircom Media, MUAS is pleased with their flexible enterprise-wide installation consisting of AV signal switching, distribution, processing, and streaming products from Extron.

“It was vital that the new AV system be as dependable as the Extron-based systems we had in other buildings; but, this one also had the unique requirement of needing to work in multiple divisible spaces,” says Ingo Haneklaus, IT Support at Münster University of Applied Sciences – Campus Steinfurt. “With some help from Faircom and the engineers at Extron, the Audimax system was up and running well in each room configuration.”