



Extron DTP & Streaming Systems Help Maricopa County Bridge the Collegiate Communication Gap

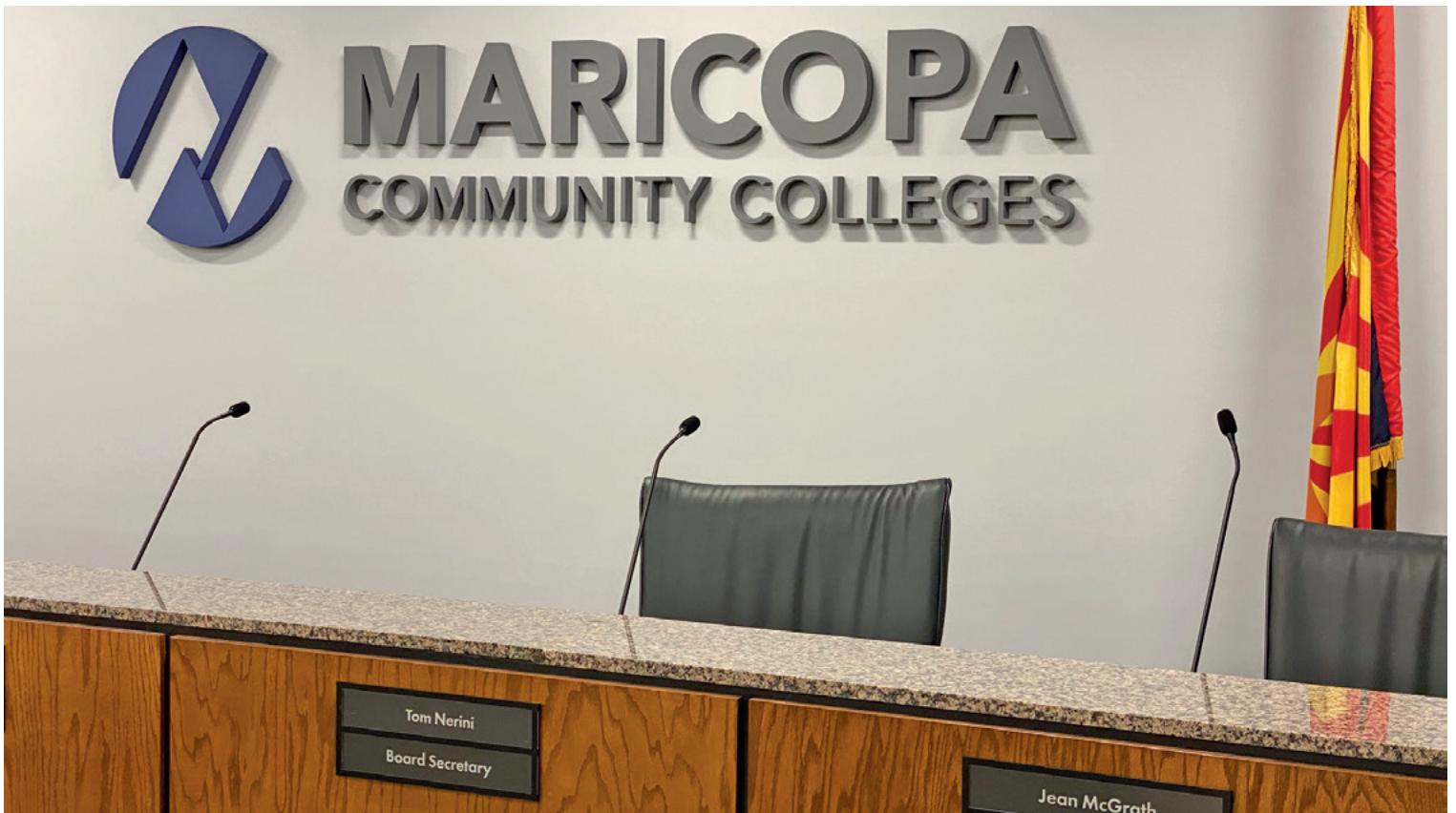
“We’ve worked with Extron on many projects and have always had excellent results. Extron products, technologies, and support are easy to work with and are the best in the business, making the whole experience a pleasure.”

Kurt Maddox, Chief Operating Officer
E1 Audiovisual Technologies

Challenges

The governing board of the Maricopa County Community College District – MCCCCD of Arizona serves as a hub for organizing and guiding higher learning among the county’s ten community colleges. One of the board’s most important roles is to plan and track the progress of programs designed to better serve their students, staff, and the other associated institutions of learning, as well as the general population of Maricopa County. Their board room required an upgraded AV system to keep pace with planned activities and pandemic-related requirements.

Board meetings are high profile, with members of the press in regular attendance and are broadcast by a local television station. Board members wanted to be able to also stream sessions for county residents and other interested parties. In the past, the quality of the audio along with the video were sub-par. The new AV system had to weave together the various systems seamlessly and provide enhanced capabilities for the board members. MCCCCD brought in E1 Audiovisual Technologies, Inc. to spearhead the system upgrade. The AV system would facilitate local and remote communication. E1 designed a solution that would use a DTP CrossPoint 4K presentation matrix switcher along with a variety of Extron products and technologies.



The MCCC board room is outfitted with a high-end projection system, auxiliary displays, an expansive sound system with multiple microphones, plus videoconferencing, streaming, and broadcasting capabilities. Each subsystem is tied into a powerful DTP CrossPoint 4K Series presentation matrix switcher.

Solution

The MCCC board room features a high-end projection system, displays on the side walls, and a conference table on a dais with a microphone at each seat. There is ample space for an audience, and the AV system has overflow capabilities. Additional resources include five NDI cameras, a Newtek® Tricaster® system, multiple computers, along with a document camera and a Blu-ray® player at a portable lectern. To support the news media and facilitate televised events, HD-SDI connections are positioned at strategic locations throughout the room and within the adjacent control room. A total of 26 gooseneck microphones are installed at the main council table and the two adjacent sub council tables. An additional gooseneck microphone is mounted on the lectern. Two lavalier, two hand-held, and eight boundary microphones allow presenters to roam throughout the space and support audience participation.

DTP Enables High Performance AV Matrix Switching

An Extron DTP CrossPoint 108 4K IPCP MA 70 presentation matrix switcher provides switching, scaling, and routing of HDMI video and audio signals. Various other signal formats are converted for distribution. For example, Extron DSC 3G-HD A and DSC HD-3G A scalars facilitate signal transmission to the broadcast system and also provide audio embedding and de-embedding. Transmissions from this sub-system are sent to Extron DA4 12G HD-SDI Distribution Amplifiers to support the multiple wallplate connections. Relays on the DTP CrossPoint® matrix

switcher control lowering and raising of the projection screen. The matrix switcher and other AV system components are rack-mounted in the adjacent control room.

DTP R HWP 4K 231 D wallplate receivers support the monitors at the three council tables and the lectern. Mounted beneath each table and within the lectern are Extron DTP T USW 233 transmitters that provide local switching and signal extension to the matrix switcher. AV connectivity is through an Extron Cable Cubby 100 US cable enclosure. For KVM communication, USB Extender Plus Series transmitters and receivers send USB signals over shielded twisted pair cable infrastructure.

While presentations are usually managed from the control room, a presenter can choose to operate the system using the Extron TLP Pro 725M 7" touchpanel mounted on a side wall. It works in conjunction with the IP Link® Pro control processor built into the DTP CrossPoint matrix switcher, streamlining the system.

DMP 128 Plus DSP Processors Deliver Crystal Clear Audio Far and Wide

Three Extron DMP 128 Plus ProDSP® processors handle audio mixing. They are linked through the processor's DMP EXP port over shielded CAT 6 cable, creating a 24-channel bidirectional 24-bit/48 kHz high-resolution digital audio expansion bus among the three units.



From the adjacent control room, the MCCCC operator is able to monitor and operate the DTP system, facilitate streaming and recording, as well as manage feeds and AV content availability for the broadcasters.

The DMP processor, wireless receivers, and Tricaster are connected via Dante® audio, which is transported over MCCCC's network. The DMP 128 Plus C V AT processor also enables VoIP, and the DMP 128 C P AT brings any POTS phone lines into the AV system. Each processor provides AEC that ensures clear, natural communication for all participants and observers, as well as for the recordings.

Extron FF 220T Flat Field® ceiling speakers driven by an Extron XPA U 1004-70 four-channel amplifier provide high quality sound throughout the room. This plenum-rated ceiling speaker was selected for several reasons, including its capability to provide consistent sound levels across a wide listening area. The tile design mimics the appearance of an air vent in a suspended ceiling, letting it hide in plain sight. Only eight of these speakers were needed to ensure pristine sound coverage for the entire room, with three over the dais and lectern and five supporting the audience. The control room and overflow spaces required a single FF 220T speaker each to provide clear sound in those areas.

MediaPort 200 Bridges the Communication Gap

The Extron MediaPort 200 HDMI and Audio to USB Scaling Bridge enhances audio and video quality with the professional-grade videoconferencing PTZ cameras, boundary microphones, and the sound reinforcement system. The unit's video processing technology is specifically engineered to optimize image scaling and frame rate



Presenters operate the AV system using the TLP Pro 725M TouchLink® Pro touch panel mounted on a side wall of the board room.

conversion, preserving the image detail and the legibility of the source content. Using generic drivers, it designates the AV, camera, and audio equipment as USB devices, which simplifies integration.

The USB connection on the MediaPort® provides a 4x2 channel audio interface and supports exchanges with the microphones and cameras, bridging the near and far ends. An AEC output reference and the built-in audio processing tools for gain, mixing, filtering, and ducking enhance audio quality for the remote sources.



The AV system components, such as the DTP CrossPoint 108 4K IPCP MA 70 matrix switcher and the three DMP 128 audio processors, are rack-mounted within the control room.

To support televised broadcasts, Extron DSC HD-3G A and DSC 3G-HD A scalers convert signal formats between HDMI and 3G-SDI. These scalers also handle audio embedding and de-embedding.

Results

Completed in just six months, the room's high-performance AV switching system meets all of the community and broadcast requirements for the governing board. It adds support for a wide variety of mobile sources and facilitates access for local and remote participants. Audio is crystal clear for the board members and the local, online, and television audiences. Also, the quality of each recorded session is at the highest level, making it ideal for archiving of ratified directives.

The board members and guest presenters find the AV system easy to use with little to no instruction. From the first use of the upgraded system, the MCCCDD AV support team have appreciated they are freed from having to respond to emergency calls late into the night. Also, the rock-solid performance and reliability of DTP eliminates the need for constant troubleshooting. The facility stands ready for when the MCCCDD returns to live meetings.

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