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State of the Law Meets State of the Art

How Tesira® DSP Enhances the Learning Experience at the Boston University School of Law

Established in 1872, Boston University School of Law is a top-tier program with a faculty recognized nationally for its exceptional teaching and preeminent scholarship. In a move to provide its students with a cutting-edge learning experience, the university built a new 93,000-square-foot, five-story addition to its 18-story Law Tower, and also completed a full-scale renovation of the original structure. Each of the new Sumner M. Redstone Building's classrooms, practice courtrooms, and seminar rooms is equipped with AV technology to enable webcasting for remote learning and record-and-playback capabilities. Audio for the system is centered on Biamp Systems' award-winning Tesira® digital signal processor (DSP), which provides pristine audio quality and the flexibility of audio video bridging (AVB/TSN) technology.

SUMMARY

Location
Boston, Massachusetts, USA

Facility Scope
Sumner M. Redstone Building is a 93,000 square foot, five-story class-room building and 17-story law tower.

Integrator
HB Communications

Biamp Product Family
Tesira

Objectives
Outfit new wing of the law school with an AV system that enables webcasting for remote learning and record-and-playback capabilities. Renovate existing classrooms, updating the AV system to be compatible with the new addition.

Solution
Tesira with SpeechSense™ and AmbientSense™ and AVB/TSN.

Outcome
Using Tesira's AVB/TSN backbone, the system provided the scalability the project required to address the university's needs, while saving money and ensuring system flexibility for future expansion.

CHALLENGE

Recognizing the increasing importance of technology in the classroom, Boston University School of Law looked to provide its students with a state-of-the-art educational experience. To achieve this, the university began construction on the new Sumner M. Redstone Building in 2013. Located at the base of the Charles River Campus' Law Tower, the building was intended to provide a new entrance to the law school and house the majority of its classrooms, as well as its practice courtrooms and seminar rooms. Each space would be outfitted with the latest AV technology to enable webcasting for remote learning, and would include record-and-playback capabilities to help students sharpen their presentation skills in the courtroom. In a second phase of the project, the university's Law Tower itself would be completely renovated, with its classrooms, courtrooms, and interview rooms also receiving high-tech upgrades.

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WHEN WE WERE AWARDED THIS PROJECT, ONE OF THE FIRST THINGS WE RECOMMENDED WAS AN UPGRADE FROM THE OLDER DSP THAT WAS ORIGINALLY SPECIFIED TO BIAMP'S TESIRA.

–Michael Dodge
Senior Systems Design Engineer at HB Communications

SOLUTION

To realize Boston University's vision, system integrator HB Communications installed a building-wide AV solution built around Crestron's DigitalMedia™ and control products for AV switching, control, and monitoring; the Echo360 Active Learning Platform for recording and webcasting; with audio capabilities provided by Biamp's Tesira platform. Tesira features SpeechSense™ and AmbientSense™ technology, which enhance speech processing by more accurately distinguishing between human speech and ambient room noise. Tesira provides extensive audio processing; including signal routing and mixing, equalization, filtering, dynamics, and delay; as well as control, monitoring, and diagnostic tools. In addition, Tesira offers highly flexible and scalable networking capabilities by utilizing AVB/TSN.

"When we were awarded this project, one of the first things we recommended was an upgrade from the older DSP that was originally specified to Biamp's Tesira," said Michael Dodge, senior systems design engineer at HB Communications. "For an AV system of this magnitude, we wanted to utilize the latest and most advanced technology. We've worked with Biamp for years and knew that Tesira would deliver impeccable audio quality. Plus, its ability to run AVB/TSN over fiber was a crucial feature as the scope of the project expanded."

SYSTEM SPECIFICS

E ach of the 18 classrooms, three courtrooms, and numerous seminar rooms in the Sumner M. Redstone Building is equipped with Echo360 technologies and a Crestron DigitalMedia matrix switcher, allowing the instructors to capture their lessons and make them available for students via their mobile devices – creating an interactive lesson both during class and outside the classroom. Audio and video signals can also be sent to a control room, where AV operators at four workstations monitor and record classes and facilitate video conferencing capabilities. The control room headend features four Cisco Codecs for live remote teaching and video conferencing, an additional Echo360 recording device, a 128x128 Crestron DigitalMedia matrix switcher, and a 128x128 Kramer HD-SDI switcher. Initially, analog audio signals were being distributed to and from the control room over fiber, tying into a 128x128 Kramer audio switcher in the headend; this audio switcher was nearly full by the end of the building's installation.

When the renovation of the Law Tower began, many rooms were not originally intended to connect to the control room for monitoring and recording capabilities. However, the scope of the project expanded, resulting in the need to equip them with this functionality. With the originally specified switchers full, the decision was made increase the capacity of the Crestron DigitalMedia and Kramer HD-SDI switchers and to take advantage of Tesira's extensive AVB/TSN channel count capabilities — allowing audio signals to be routed digitally and eliminating the need for the analog audio switcher altogether.

EQUIPMENT LIST

(30)   TESIRA SERVER-IO AVB

(01)   TESIRA AVB-1

(80)   SEC-4

(32)   SIC-4

(66)   SOC-4

(25)   STC-2

(01)   TESIRAFORTÉ AVB AI

(04)   TESIRAFORTÉ AVB CI

CONCLUSION

Developing the right AV solution for Boston University required components from different manufacturers in order to deliver what the law school needed.

"Moving the audio signal routing at Boston University to Tesira not only allowed us to accommodate the additional rooms in the Law Tower, but it also saved the university over $10,000 by eliminating the need for the analog switcher," continued Dodge. "In addition, in a system of this size that is performing every day, there are several potential failure points. With Biamp Tesira, we were able to eliminate many of them."

The results were impressive. Using Tesira's AVB/TSN backbone, HB Communications designed and installed a system that provided the scalability the project required to address the university's needs, while saving money and ensuring system flexibility for future expansion.

"Our Sumner M. Redstone Building opened in 2014 and the Law Tower reopened in 2015. In that time, we've received nothing but positive feedback on the system," said Arthur G. Martins, learning and event technology specialist for Boston University School of Law. "For faculty, it has proven to be extremely reliable and simple to use, making it easy for them to teach in real-world settings as well as the classroom. For students, Tesira provides perfect audio comprehension for webcasting and playbacks, and has had an immediate impact on the quality of their learning experience."

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> **–Arthur G. Martins**
> Learning and Event Technology Specialist III,
> Boston University School of Law

ABOUT BIAMP SYSTEMS

B iamp Systems is a leading provider of innovative, networked media systems that power the world's most sophisticated audio/video installations. The company is recognized worldwide for delivering high-quality products and backing each one with a commitment to exceptional customer service.

Biamp is dedicated to creating products that drive the evolution of communication through site and sound. The award-winning Biamp product suite includes: Tesira media system for digital audio and video networking, Devio® collaboration tool for modern workplaces, Audia® digital audio platform, Nexia® digital signal processors, Vocia® networked public address and voice evacuation system, and Oreno® mobile control software for Tesira-equipped rooms. Each has its own specific feature set that can be customized and integrated in a wide range of applications, including corporate boardrooms, conference centers, huddle rooms, performing arts venues, courtrooms, hospitals, transportation hubs, campuses, and multi-building facilities.

Founded in 1976, Biamp is headquartered in Beaverton, Oregon, USA, with additional engineering operations in Brisbane, Australia, and Rochester, New York. For more information on Biamp, please visit www.biamp.com.