



Baylor University

Customer
Baylor University

Location
Waco, Texas USA



The Customer

Based in Waco, Texas, Baylor is a private Christian university and a nationally ranked Research 1 institution. Baylor provides a campus community for more than 20,000 students studying across numerous disciplines.

Baylor University owns and operates the McLane Stadium, which has a capacity of over 50,000 and is the home of the Baylor Bears football program. In addition to sporting events, Baylor uses McLane Stadium to host concerts and other community events.

The stadium is equipped with multiple high-definition LED video boards, including the largest rear-facing display of any collegiate stadium in the United States. It also features ribbon displays around the stadium.



Solution at a Glance

- ▶ In 2024, Baylor University created a new broadcast hub at McLane Stadium to support events and live streaming across multiple venues. It includes four control rooms, an audio room, and is compatible with both modern IP standards and legacy systems.
- ▶ Baylor University selected Evertz SDVN for its broadcast hub, featuring MAGNUM-OS for workflow management, Evertz VUE for centralized control, and a redundant NATX-32 system for scalable routing, along with multiviewers and timing support.
- ▶ Baylor upgraded to an Evertz DreamCatcher™ system with 36 inputs, 12 outputs, and support for 1080p video. The system includes four SMPTE ST 2110 clip playouts, six replay operators, and two Live Edit licenses. Baylor's familiarity with DreamCatcher™ led to the upgrade for its new broadcast center.
- ▶ Baylor's new broadcast facility was completed in six months, ready for the 2024 football season.

The Challenge



In early 2023, Baylor decided to relocate and expand its existing broadcast operation into one, newly constructed broadcast hub based at McLane Stadium.

As well as dealing with sporting events and concerts at McLane Stadium, the new broadcast hub also needed to service five other sporting venues owned by the university and located within 1 mile of the broadcast hub. These venues offer facilities for many major college sports including baseball, basketball, volleyball, soccer, softball, and acrobatics and tumbling.

The aim of the new facility was to produce content for the McLane video boards, and for live broadcasts to various streaming services including ESPN and PecoCKTV/NBC. Baylor, in conjunction with its own consultants and systems integrator,

BeckTV, identified the need for four control rooms - two for live broadcast and two for servicing the video board shows, but with capability to also handle live broadcasts. This would ensure that Baylor could carry out four (or more) simultaneous game productions – two for broadcast and two for in-venue production. The facility also needed to include two audio rooms and a camera shading room.

Alongside its own broadcast engineering staff, Baylor wanted the new facility and the equipment within it to be accessible to contract staff brought in for larger events, and to Baylor students who are studying broadcast and creative production. The facility had to accommodate the latest SMPTE ST 2110 standards for IP broadcast technology, and still have the ability to deal with legacy baseband SDI systems.



The Routing Solution

After researching various options, Baylor and BeckTV chose an Evertz Software Defined Video Networking (SDVN) solution for the IP core of the new facility. The SDVN provides scalability and flexibility to support all types of formats including the industry-standard SMPTE ST 2110 and NMOS. This allows Baylor to tap into the power and reliability of IP routing without excluding baseband SDI technology.

At the heart of the Baylor broadcast hub is Evertz' MAGNUM-OS, a comprehensive orchestration, monitoring and analytic platform for IP-based and hybrid facilities that is designed to simplify workflows, reduce operational costs, and increase efficiency. MAGNUM-OS provides full control of the edge devices and the core IP switch fabrics while managing the link bandwidths and flows between them. Using NMOS IS-04 and -05, MAGNUM-OS discovered and registered the third-party devices that were part of the new hub, including (but not limited to) the Grass Valley K-Frame production switcher and Telestream PRISM.

MAGNUM-OS also manages the audio workflow that bridges the existing Dante® audio network and the SMPTE ST 2110 audio subsystem (with Evertz 9821EMR-AG-HUB). Routing of video and audio flows are done seamlessly using traditional LCD panels (CP-1040E and CP-2272E).

In addition to MAGNUM-OS, Baylor also installed Evertz VUE, a software defined tool that allows users to access and control multiple systems for a single interface. For Baylor, VUE operators can manage the entire broadcast hub from a single intuitive interface.

MAGNUM-OS provides comprehensive monitoring and real-time analytics to assist

the Baylor operations staff in identifying and resolving any issues that appear during their productions.

For Baylor's core IP routing system, BeckTV specified a redundant Evertz NATX-16/32/64-100G network-based video/audio IP solution that utilizes a 10/25/100GbE infrastructure for routing video and audio with unprecedented scalability, reliability and accuracy.

“At Baylor, the core routing system needed enough bandwidth to accommodate future expansion,” says Peter Dernbach, Senior Engineer at BeckTV. “We installed a NATX32, which can be easily expanded to a NATX64 should the need arise. In recent years routing density has increased significantly and the amount of routing that can be achieved from a small platform such as the NATX32 is amazing. This was particularly relevant at Baylor because we were dealing with size constraints and needed to save as much room as possible in the rack.”

The remaining components of the core IP system includes Evertz multiviewers (supporting up to 46 displays) using software licensed apps on ev670-X30-HW-V2 Virtualized Media Processing Platform. Bridging the existing SDI infrastructure was accomplished with IP media gateway software apps on the ev670-X30-HW-2 to support 288 in and out SDI feeds.

The entire facility timing was delivered by a redundant Evertz 5700MSC-IP Grand Master Clock and Video Reference Clock system, which supports both black burst legacy SDI equipment and SMPTE 2059-2 for the SMPTE ST 2110 based devices.



The Replay Solution



For its replay solution, Baylor chose an Evertz DreamCatcher™ system with SMPTE ST 2110 support. The system is configured as a 36 input and 12 output system for 1080p video formats that supports six replay operators. The system also includes four SMPTE ST 2110 clip playouts for production playout and a pair of DreamCatcher™ Live Edit licenses for quick turnaround edits.

The decision to install Evertz' DreamCatcher™ Production Suite was an easy one to make because Baylor was already familiar with the technology, having had a DreamCatcher™ DC-ONE for a few years. However, building the new broadcast center provided the impetus to upgrade to the latest version of DreamCatcher™ and expand the number of operators who could be on the system at the same time.



The Timeframe



There's always a deadline and for Baylor University's new broadcast facility that deadline was the start of the 2024 college football season in August.

Before work could begin on the technical installation, space for the facility had to be found. At McLane Stadium, an area behind the ticket booth and formerly used for storage was remodeled to suit the new broadcast center's layout.

Once the technical team came on site, they had just six months to complete the project.

"The first game of the football season was critical on-air game, and we had to be ready for that," Peter Dernbach says. "There were a few earlier events but that was the big one and we were very glad we made the deadline."

Dernbach adds that BeckTV's relationship with Evertz was critical to the success of the project. "We've worked with Evertz on a number of projects in the past, so we know the team and we work well together. We couldn't have done this project without that tight coordination."



The Conclusion



Baylor's Evertz NATX hybrid routing system delivers on three fronts:

- It offers exceptional density without taking up too much rack space
- It allows Baylor to use SDI baseband sub systems that staff are familiar with and are currently more cost effective than IP equivalents.
- It provides an easy upgrade path should Baylor decide to go fully IP in the future.

BeckTV, in conjunction with Evertz, has delivered four exceptional control rooms that give Baylor's broadcast hub all the flexibility it needs to cover multiple events from various different venues. In doing so, the two companies met the design challenge, which was to give Baylor flexibility and capacity to take on more complex productions in the future.

"We are grateful for the support from Evertz who was committed to continuing a strong partnership with Baylor Athletics by tailoring solutions that met our unique needs. The designers and engineers valued our input and encouraged open communication, and were receptive to suggestions to ensure that its solutions exceeded our expectations."

Chris Humphreys
Assistant AD of Baylor Athletics - 1845 Studios



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