BIAMP® SYSTEMS

Case Study: Recreation

DENVER MUSEUM OF NATURE & SCIENCE

Denver Museum of Nature and Science Expands its Facilities and Gives its 112-Year-Old Building a Technology Face-Lift

The Denver Museum of Nature and Science is the Rocky Mountain region's leading resource for informal science education. A variety of exhibitions, programs and activities help the Museum's visitors experience the natural wonders of Colorado, our planet, and the universe. The Museum aspires to create a community of critical thinkers who understand the lessons of the past and act as responsible stewards of the future.

Over the course of its 112-year history, the Museum has never had a facility-wide paging system. Currently under construction for their largest expansion to date, it was clear in the early planning stages that each gallery, and the building in general, was in need of a comprehensive technology face-lift.

THE CHALLENGE

The biggest challenge to the implementation of the project was the installation itself. With the advanced age of the Museum's facilities, it was important for them to invest in the network infrastructure necessary to support the digital equipment required to meet their needs, while simultaneously maintaining the integrity of the building. With the addition of over 126,000 square feet and five new levels, the entire museum and each exhibit gallery needed audio/video technology upgrades in order to continue serving their patrons.

> We cannot wait to take advantage of the server-based DSP Tesira® system.
> It is going to save us money, rack space and integration time.
> *–Tim Nicholson*

THE SOLUTION

Tim Nicholson is the Technology Manager and Senior Systems Developer at the Denver Museum. His relationship with Biamp Systems began when their Planetarium was being renovated in 2007. At the time, they were using a 16-channel audio system controlled by a unit. The unit was failing frequently and Tim was tasked with finding a replacement. That's what led him to Biamp Systems and the successful implementation of a frontend AudiaFLEX system in the Planetarium.

Immediately following the Planetarium project, construction on a new permanent exhibition gallery was concluding. This gallery contained an open space impromptu theater that needed acoustic design, as well as gallery-wide audio for music, pre-recorded messages, and general paging. The Museum staff also knew that they would eventually need a museum-wide paging system. While the Planetarium project was originally intended to be a standalone system, Tim and his colleagues realized the potential with Biamp products, and decided to expand by installing AudiaFLEX systems in all of their exhibit halls and live event spaces.

As soon as the Vocia® Networked Public Address and Vocia Evacuation System was available, the Museum decided to take advantage of its decentralized, network architecture for their museum-wide public address system. Instead of using the Vocia system for voice evacuation, it was integrated with the existing Audia® system for live pages and the automatic playback of pre-recorded messages for daily announcements and event notifications throughout the day.

It wasn't possible to achieve all their goals with an Audia system alone, so the Museum installed a Vocia system and simply dropped VO-4 output devices into every location where paging capabilities were needed. Together, the two product families created one integrated system and were able to use the same speakers and CobraNet® LAN, saving the Museum time on the installation and money on the overall equipment costs.

> "The software is extremely powerful, but very easy to comprehend.
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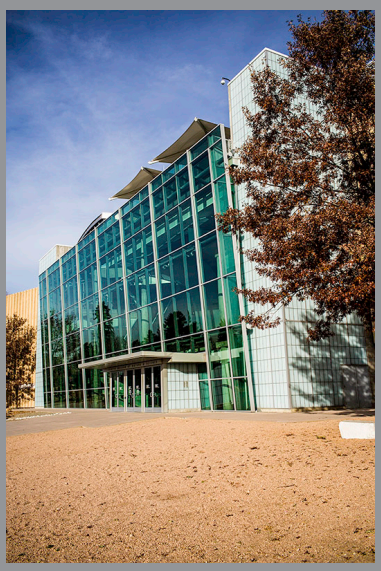
> The hardware has been rock solid for many years now. We have not had a single failure in any of the product lines (Audia, Vocia, and now Tesira) since we turned them on.
>
> *—Tim Nicholson*



While completing final construction at the time of this publication, the Museum is currently prototyping and exploring a handful of Tesira® products. When the remaining Tesira equipment is purchased, installed and programmed, the final phase of the system will go live in December 2013. Working effortlessly together, the implementation of these three systems is expected to continue to offer more flexibility in how each of the exhibit and event spaces are utilized and controlled.

INTEGRATED SOLUTION IMPROVES FUNCTIONALITY

The greatest strength of the installation is the combination of Audia and Vocia to create an integrated audio solution. The current and future goals of the Museum could not have cost-effectively been achieved with a single product, but through the combination of AudiaFLEX and Vocia, they work seamlessly.

After using a system with consistent failings and needs for repair and maintenance, the Museum staff are delighted by how easily they were able to change the scale of their systems, and adjust them to their unique needs. Tim programmed an AMX control device for the system so all of the Museum's users have some level of control. Whether it is controlling the volume of microphones or adjusting EQ's for a live event, all the users are relieved at how simple the system is to operate and maintain.

SYSTEM SPECIFICS

Components:

Audia: 14 FLEX, 52 IP-2 and 52 OP-2e cards, 5 EXPI, 3 EXPO, 2 EXPI-D, 1 EXPI/O-2

Vocia: 8 VO-4 Output device, 1 VI-6 Input device, 3 VA-8600 amplifier, 1 VA-2060, 1 DS-10 Desk Station microphones, 1 MS-1 Message Server

Tesira: 1 Server, 2 Server-IO, 8 EX-MOD, 12 EX-OUT

The Museum had 12 spaces to upgrade including an IMAX® Theater, large and small exhibition galleries, hallways and administrative offices. The AudiaFLEX system was installed in nine of the spaces where localized audio control and additional processing was needed, such as in the IMAX Theater and Planetarium. In the security office, cafeteria and atrium spaces where audio control and additional processing was not a primary necessity, VO-4 devices were installed. Since the Vocia system communicates remotely over the CobraNet LAN to any space and plays over the local speakers without additional software or hardware, this setup is both convenient for the Museum users and decreases the costs and space requirements for equipment storage.

The use of Tesira products in the Museum will be critical to their ability to support all routing of audio and various media throughout the facility. The Tesira Server-IO allows for up to 48 channels of audio input and output, while the EX-MOD and EX-OUT exponentially expands the available channels of audio I/O. This scalability enables the Museum to continue to meet their growing needs, and the needs of their patrons, for AV scalability and flexibility.

ABOUT BIAMP SYSTEMS

Biamp 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 product with a commitment to exceptional customer service.

The award-winning Biamp product suite includes the Tesira® media system for digital audio networking, Audia® Digital Audio Platform, Nexia® digital signal processors, Sona™ AEC algorithm and Vocia® Networked Public Address and Voice Evacuation System. Each has its own specific feature set that can be customized and integrated in a wide range of applications, including corporate boardrooms, conference centers, 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. For more information on Biamp, please visit www.biamp.com.