AV over IP Simplifies Media Distribution in German Conference Center

Atlona OmniStream Pro encoders and decoders enable "virtual" AV routing over the IP network at Tagungs and Konferenz Zentrum, a conference center based in Bad Sassendorf, Germany

Originally built as a town hall in the 1970s, Tagungs and Konferenz Zentrum, a conference center based in Bad Sassendorf, Germany, is undergoing a major facility-wide renovation. In addition to upgrading general facilities and structure, the conference center is undergoing a complete IT overhaul to manage network traffic, increase capacity, and strengthen systems security.

AV is one operation that will transition to the network as a result. The management at Tagungs and Konferenz Zentrum hired Bimagotec, an Essen-based systems integration firm, to design and integrate an AV system that could seamlessly transition those services to the network. Atlona's OmniStream™ AV over IP distribution platform is at the core of the system, integrating directly with three Cisco managed switches to accommodate AV traffic and bandwidth. The three switches interconnect via a fiber-optic ring to address the security concerns of moving sensitive AV content to the network.

The AV system plan was initially excluded from the IT infrastructure. The original system concept specified HDBaseT matrices, but as the project progressed, it was determined that the design had limitations when it came to connectivity across different rooms. There was also concern about being locked into a specific number of inputs and outputs per space.

The desire to scale more easily to address future growth, led key stakeholders to change direction. All AV traffic would be routed on a dedicated network separate from general IT traffic, with new Category 7 network cabling installed facility-wide to carry all signals. This ensures that all network traffic flows freely and without service interruptions.

"Our conference guests today demand modern media technology, and AV over IP provides much stronger flexibility in all of our meeting spaces," explains Thomas Tiete, technology manager at Tagungs and Konferenz Zentrum. "Client de mand mandated that all rooms could be used multi-functionally, and that content could be transmitted seamlessly throughout the complex."

Dynamic Spaces

As with most conference centers, the meeting spaces greatly vary in size. The flagship space is a large auditorium capable of seating up to 2,000. The main

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auditorium features a lectern, three Epson projectors, a Philips projection screen, and a preview monitor onstage. In this space, users may also operate the system via a main touch panel for centralized control of all functions. Audio mixing and control are achieved through a Yamaha audio console.

Additionally, there are eight smaller seminar rooms that seat anywhere between 20 and 50 participants. These rooms feature OmniStream Pro encoders and decoders, an Epson projector, a monitor, a Philips projection screen, and a Panasonic camera.

Bimagotec Systems Integration Specialist Tim Schwartz explains that in these spaces, the custom-built media cubes can be used in a couple of different configurations.

"The media cubes are very adaptable to all types of seating in these rooms, depending on whether the tables are rectangular or round," said Schwartz. "There is a power plug and a media controller input on the side of each media cube, and the Atlona encoders are integrated inside. These media cubes are small boxes that you can place inside the room, or you can integrate them into the conference tables. This makes for a very clean installation."

Front to End Benefits

Designed to deliver flexible, scalable AV distribution, Atlona OmniStream Pro encoders and decoders enable "virtual" AV routing over the IP network. They also perform automated monitoring and centralized firmware updates,

and were compatible with the Cisco managed network switches in the specification. Perhaps most importantly for Tagungs and Konferenz Zentrum, OmniStream's low latency (half a frame encode-to-decode) and built-in Forward Error Correction algorithms ensure real-time content delivery, and integrity of the AV signal.

All AV signals are transmitted through a number of custom-made media cubes, each of which is equipped

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with an RS-232 keypad that acts as a control interface. Control and AV signals are connected to an OmniStream encoder.

The AV over IP system features more 20 OmniStream Pro Series encoder/decoder channels as well as AES67 interoperability for audio transport. Audio is ultimately delivered to an Audiocenter loudspeaker system for high-quality sound reinforcement.

Schwartz notes that the main auditorium required additional encoders and decoders in the space to connect additional cameras and other AV devices, depending on the technical needs of the event. All devices support HD 1080p video, which was determined as optimal for the presentations that take place both in the main auditorium as well as the smaller seminar rooms.

"We are convinced that transitioning to an AV over IP strategy was the right decision for this customer," says Johannes Raestrup alias Montgomery Scott, project engineer at Bimagotec. "OmniStream was important to making everything work. The technology offers us not only high transmission quality, but many useful features such as fast switching. The switching of the sources is hardly visible within 10ms, and there is never any flicker from one source to another."

Schwartz noted that in the end, the integration processes were made simpler by the OmniStream design, which allows installers to configure systems through a web-based graphical user interface (GUI).

"The integration of the serial control keypads into the OmniStream system using the TCP proxy on the encoder simplified both the system integration and its subsequent use very noticeably," said Schwartz. "Audio integration was very easy due to the parallel transmission of AES67 audio through the Atlona encoders and decoders. We have built in the ability to leverage wireless distribution from mobile phones on this IP network, using OmniStream to distribute it to every room. There is a lot of flexibility and futureproofing built into this system."

SELECT FEATURED PRODUCTS

MODEL	DESCRIPTION	
AT-OMNI-111	The Atlona OmniStream™ 111 (AT-OMNI-111) is a networked AV encoder for HDMI up to 4K @ 60 Hz and HDR (High Dynamic Range), plus embedded audio and RS-232 or IR control pass-through.	
AT-OMNI-112	The Atlona OmniStream™ 112 (AT-OMNI-112) is a networked AV encoder with two independent channels of encoding for two HDMI sources up to 4K @ 60 Hz and HDR (High Dynamic Range), plus embedded audio and RS-232 or IR control pass-through.	
AT-OMNI-121	The Atlona OmniStream™ 121 (AT-OMNI-121) is a networked AV decoder for HDMI / HDCP 2.2 output supporting resolutions up to 4K @ 60 Hz and HDR (High Dynamic Range), and RS-232 or IR pass-through.	
VELOCITY™ SYSTEM	The Atlona Velocity™ System is an innovative IP-based platform for AV control, room scheduling, and asset management. It includes the Atlona Management System (AMS) for configuring and managing OmniStream and other Atlona devices over a network. Once installation is completed and handed over to your client, the system provides continual system monitoring, event notifications, and the ability to manage and schedule firmware updates.	