

AV over IP Success Story

Real-Time AV Collaboration Across Two Facilities, 20 km Apart

Sector: Energy | Enterprise Monitoring | Location: Medellín, Colombia

A leading private energy company in Colombia needed a reliable, scalable way to share real-time camera feeds and audiovisual content between two of its facilities in Medellín — the Balsos and Ancon Sur buildings. Located roughly 20 kilometers apart, the sites had to collaborate seamlessly over an existing MPLS network while keeping bandwidth low, operation simple, and reliability high.

To meet those demands, the company deployed MuxLab's AV over IP ecosystem, built around the 500860 AV over IP Transceiver platform with integrated Q-SYS audio and control.

The Challenge

Each facility ran six monitoring workstations, and every workstation carried an HDMI camera source that needed bidirectional AV communication with the other building. In practice, each operator had to both send their local feed and receive remote feeds at the same time.

The company needed a single solution that could deliver real-time AV distribution between sites, simultaneous transmit and receive at every workstation, multi-camera monitoring, seamless source switching, efficient bandwidth use, centralized and intuitive control, and a network architecture ready to scale. Because the two buildings were joined by an MPLS link spanning about 20 km, network efficiency and system stability were critical design factors.

The Solution

The system was designed around the MuxLab 500860 AV over IP Transceiver, taking advantage of its ability to simultaneously encode and decode video and audio within a single device. Seven 500860 units were deployed at each building — six for operator workstations and one for the main monitoring display.



This bidirectional architecture lets each workstation transmit its local HDMI camera feed onto the AV over IP network while simultaneously receiving and displaying remote sources from other workstations. Using a single transceiver per station significantly simplified hardware requirements and reduced overall system complexity. The 500860's integrated multiview also lets operators monitor up to 10 camera feeds at once on a single display, sharpening situational awareness across both facilities.

Network Infrastructure

The AV over IP network runs over the MPLS-based architecture interconnecting the Balsos and Ancon Sur buildings, with a Netgear NS26-300+ switching infrastructure supporting stable multicast AV distribution between the two locations.

Given the distance and the MPLS interconnection, bandwidth optimization was central to the design. MuxLab's efficient video compression enabled reliable real-time AV transport while minimizing network utilization — yet the system still delivered seamless switching, with smooth transitions between sources and an intuitive experience for operators. The result is dependable real-time collaboration and monitoring between both sites without consuming excessive network resources.

Integrated Control with Q-SYS

To simplify operation, each location incorporated a MuxLab 500813 Muximus controller integrated with a Q-SYS processor. The integration delivers centralized AV routing management, simple preset recall, and streamlined, user-friendly control — letting operators switch between monitoring layouts and source configurations with minimal complexity.

Results

The completed deployment gave the energy company a scalable, efficient AV over IP infrastructure for collaborative monitoring and content sharing between the Balsos and Ancon Sur facilities.

The project demonstrates how MuxLab's AV over IP ecosystem can deliver high-performance distributed AV for mission-critical enterprise environments that depend on reliable long-distance collaboration and monitoring.

KEY BENEFITS

- ✓ Reliable real-time AV across facilities ~20 km apart
- ✓ Reduced hardware via bidirectional transceivers
- ✓ Simultaneous multi-camera monitoring
- ✓ Seamless source switching
- ✓ Efficient MPLS-based network integration
- ✓ Simplified Q-SYS control integration
- ✓ Flexible architecture for future expansion



Products Used

Model	Description	Deployment
500860	AV over IP Transceiver (simultaneous encode/decode) with multiview	14 (7 per facility)
500813	Muximus AV over IP Controller, Q-SYS integrated	2 (1 per facility)
Netgear M4250	Managed switching infrastructure for multicast AV	Network backbone

About MuxLab

MuxLab is a leading designer of value-added connectivity solutions for the pro AV and broadcast markets. Since 1984, MuxLab has supported its main mission to provide customers with innovative, dependable and industry leading designs that are engineered in Canada. A forerunner of the AV over IP evolution, MuxLab continues to deliver comprehensive, game changing IP-enabled systems for both commercial and residential installations of all shapes and sizes.

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MuxLab offers a complete line of AV over IP solutions. Visit our website to see the complete line.