CASE STUDY

Extron Quantum Ultra Drives NOC Videowall for Colombia's Power Grid

Extron

EPM uses the videowall in their remodeled NOC to assist with monitoring and management of the electricity grid and natural gas infrastructure for the country of Colombia.

Empresas Publicas De Medellin ESP (EPM) is an energy sector company responsible for generating, distributing, and commercializing electricity and natural gas for the country of Colombia. The company's network operations center (NOC) located in the city of Medellin is central to monitoring and maintaining these services.

CHALLENGES

EPM remodeled the NOC to better serve the technicians' needs to quickly and easily view up to the minute data and images from a variety of secure sources on a videowall. Signal integrity and system reliability were paramount.

The AV system had to send the content selected at the workstations to the 3x1 videowall and a 55" display mounted on the back wall. The system was designed to display content from multiple sources simultaneously or to have a single image fill the entire videowall. Switching between sources across a variety of window layouts had to be instantaneous and seamless. Additionally, the control system had to include intuitive touchscreen operation.

EPM brought in the integration firm Ultimate Technology. Together, they designed a system that uses Extron's Quantum® Ultra processor to drive the mission-critical videowall.

"At Ultimate Technology we recommend to our customers that they use Extron equipment for their audiovisual integration installations because of its quality and durability."

Lucas Valencia
Chief Executive Officer
Ultimate Technology

An Extron DTP 4K HDMI receiver is installed behind each display, receiving signals over twisted pair cable from the Quantum Ultra videowall processor in the equipment rack.

DESIGN SOLUTION

EPM's NOC technicians monitor the components, servers, and endpoints associated with the country's electrical power grid and natural gas resources. They use their workstations and content sent to the 3x1 videowall to analyze and help identify events, faults, flow patterns, and deviations from each system's baseline functions. The videowall system is central to daily operations and also vital during evolving situations that could result in anything from process slowdowns to service outages.

The NOC encompasses three workstations in a command center layout and an adjacent equipment room identified as the Crisis Room. The workstations are used simultaneously, each with two HDMI outputs. Signals are converted for extension over the CAT 6 cable infrastructure to the Extron Quantum Ultra 4K videowall processor, which is rack-mounted in the Crisis Room. The signals are converted back to HDMI for processing.

The desk in the Crisis Room includes an Extron Cable Cubby® enclosure, providing AV connectivity for mobile devices such as a field inspector's tablet or smart phone.

Videowall Versatility with Quantum Ultra Processing

The Extron-engineered Vector™ 4K scaling engine built into the Quantum Ultra processor scales 4K/60 video and graphical content for delivery to the 3x1 videowall and the 55" display. The processor accepts two HDMI transmissions from each workstation and delivers the multiple source signals to the displays over the twisted pair cable infrastructure.

This modular processor model was selected for its appropriate size for the application, exceptional scaling quality, 400 Gbps HyperLane® video bus, and proven durability. It is populated with Quantum Ultra 4K HDMI input and DTP® output cards. The processor upscales and downscales the source content without impacting the image quality or details. The video bus easily accommodates the high-resolution content while maintaining the variety of source refresh rates. The videowall processor's open card channels are available for any future system expansion, with additional sources or display devices.

Streamlined Control with TouchLink Pro

TouchLink® Pro tabletop touchpanels working in harmony with the rack-mounted IP Link® Pro control processor enable support staff operators to manage the Quantum Ultra

In the Crisis Room, an operator selects from among the nine videowall window arrangement presets using the Extron TouchLink Pro touchpanel at the desk.

From the TouchLink Pro touchpanel in the Crisis Room, the operator can monitor the health of the videowall, including temperature, fan status, power, and more.

videowall processor from their station or the Crisis Room. This streamlined control system provides easy monitoring and operation of the videowall system.

The touchpanel's GUI menu offers instantaneous customization of the videowall content, from changing the content in one or more windows to selecting a different window layout preset and rearranging the windows on the fly. Programmed presets include variations of window arrangements on each display or across displays, including filling the entire canvas with a single image. The primary function of the touchpanel in the Crisis Room is to monitor the health and status of the videowall system, including critical details like temperature and fan activity.

RESULTS

The design team carefully evaluated technologies and solutions, as well as specific products and price points, from a broad range of manufacturers. The combined product selection and design process took nearly a year. Once the design was approved, the products were acquired.

Now, EPM's NOC has better visualization of its secure systems, with optimal management and distribution of the many video sources. The features, capabilities, and technologies built into the Quantum Ultra processor and the intuitive control system ensure the videowall system remains reliable and displays high-quality content for the EPM technicians responsible for supporting the power infrastructure of Colombia.

"Extron products were chosen for their reliability, encryption, and video processing, providing fast AV distribution."

Lucas Valencia
Chief Executive Officer
Ultimate Technology

EXTRON EQUIPMENT - PARTIAL LIST

Model	Description
Quantum Ultra 305	Ultra-High Bandwidth 4K Videowall Processor with HyperLane Bus and Five Slots
Quantum IN4HDMI	Four-channel HDMI Input Cards
Quantum OUT4DTP	Four-channel DTP Output Cards
DTP HDMI 4K 230 Rx	DTP Receiver for HDMI
Cable Cubby 202	Cable Access Enclosure for AV Connectivity and AC Power
IPCP Pro 250 xi	IP Link® Pro xi Control Processor with LinkLicense® User Interface Upgrade
TLP Pro 525T	5" Tabletop TouchLink Pro Touchpanel

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