Extron Quantum Ultra Drives Multiple Videowalls within ULA's Operations Support Center

"ULA's videowalls provide high-quality, mission-critical content to a team of engineers relying on unwavering accuracy to make critical go, no-go decisions. Extron has more than demonstrated the durability of its products. We have confidence that the system can run for the duration and be ready to support us on launch day."

Ashley P. Walker
Lead Telemetry Engineer
United Launch Alliance

Challenges

United Launch Alliance – ULA is the world's most experienced and reliable launch service provider, with more than a century of combined aeronautics heritage and the successful launch of more than 135 missions to orbit. Their Denver Operations Support Center – DOSC supports approximately 100 launch engineers with video and telemetry capabilities. Lives, equipment, and millions of dollars of payload depend on them being able to monitor all launch site activities leading up to and throughout each launch. DOSC supports their launch operations using two 1x3 videowalls that display a wide variety of sources. These range from sensor and camera feeds originating at different launch facilities to calculations and data pulled from ULA computers and servers.

To support their transition to high-definition cameras, ULA brought in Xcite Audiovisuals to handle the videowall system upgrade. The new installation had to facilitate launch team collaboration across multiple sites and provide advanced launch-on-time capabilities. Downtime caused by the cutover from the old videowall system had to be kept at an absolute minimum. For this mission-critical application, ULA and Xcite turned to the Extron Quantum Ultra videowall processor.

DOSC's two videowalls driven by Quantum Ultra processing support approximately 100 engineers with video and telemetry capabilities for day-of-launch activities.

ULA engineers have the ability to display video feeds from launch site cameras alongside analytical data. Content can be independently windowed on any portion of either or both videowalls.

The Quantum Ultra 610 processor is configured with a mix of IN4HDMI input and OUT4HDMI output cards. It receives AV source signals over HDMI from an Extron XTP II CrossPoint 6400 matrix switcher.

Solution

ULA spent a year investigating videowall solutions. The parameters applicable to the DOSC upgrade included security requirements, product lifespan, and future proofing. After careful review, the design team selected Extron's Quantum Ultra 610 videowall processor since it provided the best combination of presentation capabilities, proven reliability, upgradeability, and cost of ownership. Another very important deciding factor was that Quantum Ultra is JITC certified for use in secure government environments. This processor provided the right balance of function and ROI.

Quantum Ultra enables DOSC engineers to simultaneously view native resolution or scaled video feeds and data for launch monitoring and analysis. All sources are available for windowing on one or both videowalls. Source signals are first fed into an Extron XTP II CrossPoint 6400 64x64 matrix switcher for transmission to the Quantum Ultra processor over HDMI. The videowall processor's card frame is configured with six IN4HDMI input cards and three OUT4HDMI output cards. Its 400 Gbps HyperLane® video bus delivers the required real-time performance, and the frame-locked outputs keep images synchronized. Some of the other features that made selection of Quantum Ultra an easy decision include an embedded operating system that resides on a write-protected, solid state storage drive and redundant, hot-swappable power supplies. Xcite found that setting up the videowalls was a straightforward process using the Quantum Ultra configuration software.

A single processor supports both videowalls and provides the flexibility to let them operate as two separate videowalls or mirror the same content on both videowalls. As requirements change or AV technology evolves, the modularity of Quantum Ultra and the XTP® matrix frame provides the versatility to enhance and expand the DOSC videowall system.

Extron's local support also played a part in ULA's choice. Extron engineers were and still are available at any hour of the day for quick issue resolution, which is vital for this sensitive, mission-critical installation.

Results

The new videowall system was successfully delivered on schedule. The videowalls driven by Quantum Ultra provide critical support for the engineering team that launches rockets for NASA, national security, and commercial missions across the globe. According to Xcite, Extron had the right stuff for ULA's launch operations support center.