



Overview

A knowledge wall is the center of aggregated information used for monitoring and analyzing to make critical decisions related to security, emergency services providers, law enforcement, and military organizations. Multiple sources, both secure and public, are used within the command center for making decisions. These sources of information are then displayed on the knowledge wall. This fast-paced and mission critical environment typically consists of the main command area, offices, meeting rooms, and briefing rooms.

Needs Assessment

Staffing

The command center personnel could include representatives from various agencies or supporting organizations. A large number of people constantly monitor incoming video, notices, and other content. When a situation requires more attention, a team is formed, utilizing offices and meeting rooms to further analyze the situation and decide on a course of action. Briefing rooms provide a venue for presenting findings to a larger group, or briefing other organizations or individuals.

Display Requirements

A video wall, comprised of multiple LCD panels and several large displays, is needed in the main command area for monitoring the multitude of data streams coming into the center. Any source can be switched to one or more displays in the main command area, office space, meeting rooms or briefing centers.

Sources and Connectivity

Video feeds include public broadcasts from multiple satellite receivers, traffic camera systems, security cameras, air-to-ground from aircraft or UAV platforms, and other sites within the theater of operation. A VTC in the equipment room provides a secure channel for communication with other sites. Additionally, there are public and secure computers that provide data to the system. These computers must support a local monitor in addition to a connection to the knowledge wall.

Audio Requirements

Satellite broadcasts include audio feeds that need to be routed with the video signals.

Special Requirements

Video sources include both secure and non-secure sources that are referred to as red and black sources, respectively. Red systems must remain electrically isolated from the black system to prevent unauthorized access to sensitive information.

System Design Solution

Display Systems

Four 60-inch (153 cm) displays are mounted to the walls in the main command area. Eight thin-bezel LCD displays are configured in a 4x2 array to support large screen, multi-image viewing as the central knowledge wall.

Sources and Connectivity

PCs in the command center and public network feeds include DVI/HDMI outputs and local monitors. The secure video feeds provide DVI/HDMI signals and have local monitors. Broadcast satellite feeds use DVI/HDMI video with analog stereo audio. Air-to-ground, traffic, and security camera platforms use DVI/HDMI video.

Switching and Signal Management

The Extron **FOX Matrix 14400** provides distribution and routing of all video sources to displays located throughout the facility. The modular and hot-swappable design of the I/O cards and the redundant hot-swappable power supplies make this matrix switcher ideal for mission-critical environments like command and control centers or emergency operations centers.

Signal Distribution and Extension

Extron **FOX 500 DVI Tx** Fiber Optic Transmitters are used to send the video output of the PCs in the command center to the FOX Matrix 14400. There is a buffered monitor output to support local monitors at the workstations.

The secure video feeds use Extron **FOX 500 DVI Tx** Fiber Optic Transmitters to send signals to the FOX Matrix 14400.

Each display within the meeting rooms and briefing rooms use the Extron **FOXBOX Rx DVI Plus** Fiber Optic Receiver to convert the optical signal from the FOX Matrix 14400 into DVI/HDMI video with stereo analog audio.

The Extron **PowerCage™ 1600** Modular Power Enclosure with **PowerCage FOX Rx DVI Plus** Fiber Optic Receiver boards converts fiber optic signals to DVI/HDMI video for the Extron **Quantum® Elite** HDCP-Compliant, Scalable Videowall Processing System.

Video Signal Processing

The Extron **Quantum Elite** is a flexible, scalable video processor with a variety of input, output, and windowing capabilities. Configured here to accept up to 16 DVI/HDMI video inputs, it displays the data in a variety of scenarios on the 4x2 panel array.

