



The US Marine Corps Forces' Pacific Headquarters' Command Operations Center (MARFORPAC COC) in Hawaii required technological upgrades to meet its mission. The COC serves as the central location for the Pacific Commander to coordinate two-thirds of the operational Marine forces, making it imperative that the facility provide state-of-the-art functionality. The Global War on Terror prompted the need for oversight of multiple operations in the Pacific. The aging AV system did not meet today's need for higher information density displays and did not allow for simple reconfiguration of workstations among various networks to meet complex needs of various crises.

AVS was selected as the AV integrator to provide infrastructure and methodology to upgrade the AV capabilities. Upgrades consisted of installing audiovisual, computer and intercom systems for the COC, the Battle Cabin, and several adjacent conference rooms and offices.

Space limitations greatly impacted the design of the system. For maximum viewing with a small footprint, two elevated video walls were provided, one mounted on each end of the watchfloor. The 32-ft diagonal display uses simultaneous vertical and horizontal edge blending of high-resolution images through six 3-chip DLP 1080p projectors. Due to the extreme throw distance of approximately 50 feet, the projectors were mounted above and below the opposite video wall. The 20-ft diagonal display uses three of the same projectors horizontally blended.



Video processors integrated with the IT and AV systems create multi-image layouts, which can be selected by the master controller to display various sources (including workstation computers, satellite receivers, tuners and other video components) on each video wall and share information with any of the adjacent rooms.

Forty-five workstations are integrated into the system, with thirty-five on the main watchfloor, nine in adjacent rooms and one remote location. The master controller uses various display layout configurations to call up information from the workstations or other sources for briefing purposes. Each workstation contains a secure touchpanel acting as a KVM switch over IP to access up to four PCs through a centralized switching system. To ensure quality signal over a distance of up to 200 feet, AVS installed CAT5 cabling connections. Video from the PCs travels over CAT5 and is first converted to high-resolution analog, then to fiber or CAT5, depending upon location and security levels. All Ethernet-enabled equipment was connected to the AV network to allow for easy configuration and maintenance.

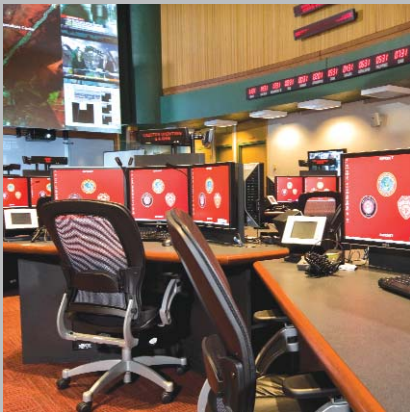


The project presented several challenges including: space limitations, lighting problems, operational constraints, and logistics. AVS redesigned the watchfloor configuration, the design of the workstations and the placement of the displays to overcome space limitations, and provided improved lighting control and maintenance access. The facility operates 24/7, so on-time completion of the project was imperative for transition from a temporary location. Transportation and delivery from the mainland to Hawaii posed a logistics dilemma, so components were shipped in pieces and assembled on-site.

The age of the facility posed problems such as structural vibrations, older circuitry and inadequate ventilation. Electrical outlets were re-wired for proper voltage, mounts for projectors were customized to be structurally sound, and adequate cooling and ventilation was installed for maximum reliability of the equipment.

The new system revamped operating procedures. Tasks are fully automated, multiple networks may be accessed simultaneously, and users at every workstation may jump between networks or send information instantly. Each workstation also has interactive whiteboard capabilities to annotate during briefings.

The success of the project was founded upon extensive communication amongst all parties throughout each phase of the installation. AVS' initial surveys led to recommendations on space usage and equipment configuration, guiding the design of the renovated system. The redesigned system is extremely flexible and intuitive, operated by user friendly interfaces. Programming and system training were designed for ease of operation and efficiency. The completed system provides technological and communication infrastructure to support MARFORPAC through the next decade.



## Project Equipment List

Major items include:

- Autopatch Epica 256 Switching System
- Black Box Secure Servswitch
- Commend Intercomm System
- Crestron Control System
- Crown Audio Amplifiers
- Extron MTP Transmitters & Receivers
- Extron FOX Fiber Transmitters & Receivers
- Extron VGA/AA Matrix Switchers
- Extron Video Scalers
- Extron Crosspoint HVA Matrix Switchers
- Extron MAV Matrix Switchers
- Lutron Light Dimming System
- Middle Atlantic Rack Systems
- Panasonic 3-Chip DLP Projectors
- Polycom Vortex Audio Matrix Mixers
- Shure Microphones
- SMART Symposiums
- Stewart Filmscreen Front Projection Screens
- Tandberg VTC CODECs
- Vista Spyder Video Processors

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