

USFK J5 CONFERENCE ROOM AV/VTC SYSTEM UPGRADE - SUPPLY

PURCHASE DESCRIPTION (PD)

United States Forces Korea (USFK)

Requirement	J5 Conference Room AV/VTC System Upgrade
Location	USFK Headquarters, Camp Humphreys, Republic of Korea
Acquisition Type	Supply - complete integrated AV/VTC end item with incidental installation, configuration, functional verification, and turnover
Equipment Basis	Government-defined J5 Conference Room equipment baseline
Reference Characteristics	Applicable technical requirements incorporated into this PD

1.0 INTRODUCTION

The purpose of this Purchase Description (PD) is to acquire a complete Audio-Visual (AV) and Video Teleconference (VTC) system upgrade as an end item of supply for the United States Forces Korea (USFK) J5 Conference Room. The furnished system shall support secure unclassified and classified briefings, multi-source presentation, selectable PTZ-camera coverage, soft-codec conferencing, intelligible speech reinforcement, and centralized operation by non-technical users.

The Contractor shall furnish and deliver all equipment, materials, accessories, licenses, mounting hardware, interconnects, and other components identified in this PD as one complete and operational AV/VTC system. Incidental mounting, installation, configuration, programming, functional verification, product familiarization, documentation, and delivery coordination are required only to place the furnished supply in its intended operational condition and are subordinate to the principal purpose of acquiring the end item of supply. No separate level-of-effort service is being acquired under this PD.

1.1 Acquisition and Technical Baseline

The equipment type, reference model, configuration, quantity, and technical requirements stated in this PD constitute the controlling acquisition baseline for J5 Conference Room AV/VTC system upgrade.

Where a reference brand or model is identified with "or equal," an offered equal item shall meet or exceed every applicable salient characteristic and shall preserve full functional interoperability with the complete J5 system. The Contractor shall identify all deviations in writing before award or, if permitted by the Contracting Officer, before substitution.

1.2 Scope Boundaries

- No new building electrical distribution, branch-circuit construction, structural alteration, or facility network infrastructure construction is included unless specifically authorized by contract modification.
- Low-voltage AV cabling, terminations, equipment interconnects, rack wiring, mounting hardware, and installation consumables required for the complete AV/VTC system are included.
- All work shall be coordinated to minimize disruption to J5 mission operations.
- Contractor-owned computing devices shall not be connected to Government networks unless expressly authorized by the Government.

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- Government-furnished equipment identified in the Statement of Work is excluded from the Contractor-furnished equipment quantities of this PD but shall be integrated into the complete delivered system as required by the SOW.

2.0 REQUIRED EQUIPMENT AND QUANTITIES

The Contractor shall provide the following material quantities. The quantities stated in this PD shall not be reduced without written Government approval.

Item	Manufacturer	Model / Reference	Description	Qty	U/I	PD Section
1	Crestron	TS-1080-GV-B or Equal	10.1-inch tabletop room-control touch panel, Government Version	1	unit	3.2.1
2	Crestron	DM-NVX-E20 or Equal	4K60 AV-over-IP encoder	6	unit	3.2.2
3	Crestron	DM-NVX-D200 or Equal	4K60 AV-over-IP decoder with scaler	3	unit	3.2.3
4	Crestron	CP4N or Equal	4-Series network-enabled room-control processor with dedicated control subnet	1	unit	3.2.4
5	Crestron	IV-CAM-P20-GV-B or Equal	20x optical zoom PTZ conferencing camera, Government Version	1	unit	3.2.5
6	Crestron	SAROS DM-NAX-IC4A-W or Equal	active PoE+ network-audio in-ceiling loudspeaker	1	unit	3.2.9
7	Crestron	SAROS IC4P-W or Equal	passive full-range in-ceiling companion loudspeaker	1	unit	3.2.10
8	LG	86UH5Q-G or Equal	86-inch commercial UHD display	1	unit	3.3.1
9	LG	LUQC048	COB LED classification banner display assembly	2	unit	3.3.2
10	LG	LUQC048	COB LED multi-time-zone information display assembly	1	unit	3.3.3
11	B-Tech	BT8310XL or Equal	heavy-duty commercial wall-mount system for 86-inch display	1	unit	3.3.4
12	Q-SYS	Core Nano or Equal	networked AV&C/DSP core processor	1	unit	3.4.1
13	Audio-Technica	ATND971A or Equal	networked boundary microphone	2	unit	3.5.1
14	NETGEAR	GSM4230PX or Equal	managed AV network switch, 24-port-class PoE+ with 10GbE uplinks	1	unit	3.6.1
15	AVerMedia	BU113G2 or Equal	HDMI-to-USB capture interface	1	unit	3.6.4
16	Custom	AV Equipment Rack	integrated AV equipment rack, 12 RU usable minimum	1	unit	3.7.2
17	Various	Installation Consumables	AV cabling, containment, connectors, terminations, labels, supports, and miscellaneous installation hardware	1	lot	3.7.3

2.1 Incidental Installation and Integration Requirements

The Contractor shall provide all incidental effort necessary to deliver, mount, connect, configure, integrate, verify, and turn over the furnished system. These activities are incidental to the supply requirement and shall not be construed as Government-directed labor-hour or level-of-effort requirements. The Contractor is responsible for determining the labor mix and hours necessary to furnish the complete operational end item within the firm-fixed-price supply requirement.

- Delivery coordination and implementation planning necessary to furnish the system.
- Removal of Government-designated existing AV equipment only as necessary to install the replacement supply.
- 86-inch commercial UHD display and wall-mount installation, Classification Banner and World Clock placement, PTZ-camera/audio equipment placement, and physical integration.
- Rack assembly, field cabling, terminations, labeling, and endpoint connection.
- Control-system, touch-panel, and AV-over-IP configuration required for operation of the furnished system.
- PTZ-camera preset configuration, source selection, room-control integration, and Government-furnished conferencing workflow integration.
- DSP/AEC configuration, audio tuning, and microphone optimization required for accepted system performance.

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- Functional verification, Government acceptance demonstration, and technical-data turnover.
- Freight, local delivery coordination, and field logistics necessary to deliver the supply to the Government.

3.0 SALIENT CHARACTERISTICS AND TECHNICAL REQUIREMENTS

3.1 General Requirements

- All equipment shall be new, current-production, and suitable for commercial/professional 24/7 mission use where such operation is required by the applicable manufacturer or display requirement.

All items requiring Trade Agreements Act (TAA) compliance under this PD shall be supported by documentation issued by the manufacturer or an authorized source demonstrating compliance. Contractor-generated or self-certified TAA letters, declarations, memoranda, or other independently prepared compliance statements shall not be accepted as evidence of TAA compliance.

- Equipment shall be supplied with all standard accessories, power supplies, mounting hardware, licenses, cables, adapters, and interconnects required for the intended J5 configuration unless expressly identified as Government-furnished.
- Proposed equal items shall be submitted with a line-by-line compliance matrix against the applicable salient characteristics before acceptance of the substitution.
- All system components shall interoperate as an integrated AV/VTC end item and shall support the configuration, functional verification, acceptance, and turnover requirements of this PD.

3.2 CRESTRON EQUIPMENT

3.2.1 10.1 in. Tabletop Touch Screen, Government Version (TS-1080-GV-B or Equal)

Quantity: 1

Make/Model Reference: Crestron TS-1080-GV-B or Equal

Required Salient Characteristics:

- 10.1 in. widescreen active-matrix color display with 1920 x 1200 WUXGA resolution.
- Projected capacitive touch screen with 5-point multitouch capability.
- Provides a tabletop form factor suitable for conference-table room control.
- Supports custom-programmable virtual control buttons and a Government-defined room-control user interface.
- Supports HTML5 or equivalent custom user interface projects.
- Built-in speakers.
- Supports H.265, H.264, and MJPEG streaming video.
- Supports streaming input resolutions up to 3840 x 2160 at 30 fps.
- Provides Gigabit Ethernet connectivity with PoE/PoE+ power support.
- Provides a USB-C port for supported room scheduling or conferencing accessories.
- Provides enterprise-grade security and authentication.
- Government Version shall eliminate the integral microphone, Bluetooth communications beacon, Wi-Fi network connectivity, and proximity sensor.
- Provides die-cast housing construction suitable for long-term commercial and government installations.
- Supports configuration and diagnostics through approved local/web-based management methods.
- Shall provide the primary J5 user interface for source selection, independent control of both 86-inch displays, conferencing functions, audio, two Classification Banners, one World Clocks operation, one PTZ camera and system startup/shutdown.
- Supports secure wired communication with the furnished room-control processor and shall not require unauthorized cloud connectivity for normal room operation.
- Shall recover to the accepted room-control project following a normal restart or power cycle.

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- Government sustainment shall be supported through delivery of the native editable touch-panel project/configuration files in accordance with Section 6.0.

3.2.2 4K60 AV-over-IP Encoder (DM-NVX-E20 or Equal)

Quantity: 6

Make/Model Reference: Crestron DM-NVX-E20 or Equal

Required Salient Characteristics:

- Supports video resolutions up to 4K60 4:2:0 and 4K30 4:4:4 over standard Gigabit Ethernet.
- Provides real-time AV-over-IP video transport.
- Provides one HDMI input for source connection.
- Supports HDCP 2.3.
- Supports fixed or adaptive video bitrate sufficient for 4K60 transport.
- Supports lossless transport of 7.1 surround audio, including uncompressed LPCM and applicable high-resolution audio formats.
- Supports AES67, including transmission and reception of 2-channel AES67 audio streams.
- Provides analog audio de-embedding.
- Provides Gigabit Ethernet connectivity with PoE power support.
- Supports automatic point-to-point interoperability with compatible AV-over-IP decoders.
- Supports device control through RS-232, IR, and CEC.
- Shall interoperate with the furnished room-control and AV-over-IP distribution architecture.
- Provides enterprise security including 802.1X, Active Directory credential management, AES-128 encryption, PKI authentication, TLS, SSH, and HTTPS.
- Provides a programmable/control API sufficient for integrated room-system control.
- Supports native interoperability with the furnished AV-over-IP, audio-over-IP, and room-control architecture without requiring protocol-translation hardware.
- Supports deployment within a unified AV, audio, USB, and control-over-IP platform architecture.

3.2.3 4K60 AV-over-IP Decoder with Scaler (DM-NVX-D200 or Equal)

Quantity: 3

Make/Model Reference: Crestron DM-NVX-D200 or Equal

Required Salient Characteristics:

- Supports video resolutions up to 4K60 4:2:0 and 4K30 4:4:4 over standard Gigabit Ethernet.
- Provides real-time AV-over-IP decoding.
- Provides one HDMI output with integrated 4K60 scaler.
- Supports HDCP 2.3.
- Supports video-wall processing for configurations up to 8 x 8 / 64 displays.
- Supports lossless 7.1 surround audio transport.
- Supports AES67, including transmission and reception of 2-channel AES67 audio streams.
- Provides analog audio de-embedding.
- Provides Gigabit Ethernet connectivity with PoE+ support.
- Supports automatic point-to-point interoperability with compatible AV-over-IP encoders.
- Supports device control through RS-232, IR, and CEC, including display-control capability.
- Shall interoperate with the furnished room-control and AV-over-IP architecture.
- Supports an embedded configurable room-control framework capable of direct display and AV-system control without requiring separate middleware.

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- Provides enterprise security including 802.1X, Active Directory credential management, AES-128 encryption, PKI authentication, TLS, SSH, and HTTPS.
- Provides a programmable/control API sufficient for integrated room-system control.
- Provides independent display scaling to support source and display devices operating at different native resolutions.
- Provides native interoperability with AV-over-IP, audio-over-IP, USB-over-IP, and room-control systems.
- Supports deployment as part of a distributed AV-over-IP architecture utilizing unified management and monitoring tools.

3.2.4 4-Series Control System with Dedicated Control Subnet (CP4N or Equal)

Quantity: 1

Make/Model Reference: Crestron CP4N or Equal

Required Salient Characteristics:

- Provides a 4-Series multicore control-system architecture or equivalent enterprise room-control processing capability.
- Supports a modular programming architecture capable of running multiple simultaneous control programs, including up to 10 programs.
- Provides onboard IR/serial, COM, digital/analog I/O, relay, Cresnet or equivalent wired device-control interfaces, and Gigabit Ethernet control connectivity.
- Provides a dedicated Gigabit Ethernet control subnet for managed AV-device connectivity separate from the primary LAN.
- Supports automatic discovery and IP-address assignment for compatible devices connected to the dedicated control subnet.
- Supports isolation of the dedicated control subnet from the primary local network for sensitive applications requiring heightened separation.
- Supports integrated control of the furnished displays, AV routing, audio system, intelligent camera, Classification Banner, World Clock, sound masking, and associated room devices.
- Supports computer/web-based control interfaces.
- Provides enterprise-class network security and authentication.
- Supports secure enterprise network communications including SSL/TLS, SSH/SFTP, IEEE 802.1X, IPv4/IPv6, directory-service authentication, and HTTPS or equivalent secure protocols.
- Supports SNMP or equivalent network-management integration.
- Supports BACnet/IP or equivalent building-management integration capability where required.
- Supports enterprise room-monitoring and management capability allowing future centralized monitoring, scheduling, status reporting, and system-management integration.
- Provides USB connectivity for system configuration, storage, and maintenance.
- Supports native integration with the furnished AV-over-IP, network-audio, and enterprise-management architecture without requiring additional protocol-conversion hardware for normal room operation.
- Supports execution of multiple independent control programs without interruption to active services.
- Shall support complete integration with the furnished room-control architecture and shall be rack-mountable.

3.2.5 Professional PTZ Conferencing Camera, Government Version (IV-CAM-P20-GV-B or Equal)

Quantity: 1

Make/Model Reference: Crestron IV-CAM-P20-GV-B

Required Salient Characteristics:

- Government-version PTZ conferencing camera suitable for Government deployment.

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- Supports video resolutions up to 1080p60.
- Provides 20× optical zoom.
- Compatible with the furnished automated multi-camera speaker-tracking system.
- Single Ethernet connection provides power, viewing, setup, and control.
- Provides video outputs including 3G-SDI, HDMI, USB, NDI|HX2, ONVIF, RTSP, and UVC.
- Supports up to 256 configurable camera presets.
- Uses a professional-grade CMOS image sensor suitable for conferencing applications.
- Supports direct connection to conferencing codecs and recording/streaming devices.
- Supports native interoperability with the furnished automated camera-tracking architecture without additional protocol-conversion hardware.
- Supports centralized enterprise management and monitoring over standard IP networks.

3.2.9 Active Full-Range In-Ceiling PoE+ Network Speaker (SAROS DM-NAX-IC4A-W or Equal)

Quantity: 1

Make/Model Reference: Crestron SAROS DM-NAX-IC4A-W

Required Salient Characteristics:

- Audio-over-IP in-ceiling loudspeaker that connects directly to a managed Ethernet network.
- Supports routing with compatible audio-over-IP, AV-over-IP, and AES67-compatible devices.
- Provides interoperability with Dante environments through AES67 compatibility.
- Shall power and distribute audio to at least one compatible passive companion speakers.
- Uses a full-range Balanced Mode Radiator or equivalent wide-dispersion transducer technology.
- Frequency response shall cover approximately 80 Hz–24 kHz or wider.
- Provides a built-in PoE+ amplifier sufficient to drive the active speaker and three passive companion speakers.
- Receives at least four channels of network audio through a supported audio-over-IP protocol or AES67.
- Provides onboard DSP including equalization, speaker protection/limiting, output delay, and individual output-channel processing.
- Provides wide dispersion suitable for conference-room speech and program audio.
- Integral back-can assembly shall be plenum rated to UL 2043 or equivalent.
- Supports direct network attachment without requiring a separate DSP-amplifier endpoint.

3.2.10 Passive Full-Range In-Ceiling Speaker (SAROS IC4P-W or Equal)

Quantity: 1

Make/Model Reference: Crestron SAROS IC4P-W

Required Salient Characteristics:

- Passive in-ceiling full-range loudspeaker compatible with the furnished active network speaker.
- Uses a Balanced Mode Radiator or equivalent wide-dispersion transducer technology.
- Frequency response shall cover approximately 90 Hz–30 kHz or wider.
- Provides approximately 170-degree conical coverage for speech and 140-degree coverage for program/music content, or equivalent performance.
- Supports direct connection to the furnished active loudspeaker through the manufacturer-compatible speaker connection.
- Also supports connection to an external amplifier where required by the accepted design.
- Plenum-rated integral metal back can shall meet UL 2043 or equivalent.
- Shall support installation in standard suspended or finished ceiling construction.
- Shall include required ceiling mounting hardware/tile bridge.

- Power handling shall be compatible with the furnished active speaker and intended room-audio design.

3.3 LG DISPLAY EQUIPMENT AND DISPLAY REQUIREMENTS

3.3.1 86-Inch Commercial UHD Display (86UH5Q-G or Equal)

Quantity: 1

Make/Model Reference: LG 86UH5Q-G

- 86" LCD displays must have a resolution of 3,840 x 2,160 or higher, and the screen size should be approximately 193cm wide / 110cm high.

The 86-inch LCD display shall also comply with Sections 3.3.5 and 3.3.6.

3.3.2 Classification Banner Display Assembly

Quantity: 2

Make/Model Reference: LG

J5 Classification Banner Requirement: LUQC048

- The Classification Banner is LED-based products made of COB (Chip on Board), and the pixel pitch should be around 1.25mm. The screen size should be approximately 1,200mm wide and 225mm high. I
- The two Classification Banners correspond to one Classification Banner inside the conference room and one Classification Banner outside the door. Classification Banner requirements shall comply with the LED Requirements and LED Salient Characteristics incorporated into this PD, including the stated PSU redundancy exception.
- Each Classification Banner shall be controllable through both a manufacturer-supplied handheld remote control and the furnished room-control touch-panel interface.
- The touch-panel interface shall provide control of normal user-adjustable Classification Banner functions, including power, brightness, and available display/content or preset selection functions supported by the furnished banner system.
- Touch-panel control of the Classification Banner shall use a wired control path or other Government-approved non-wireless interface. Normal operation shall not require Wi-Fi, Bluetooth, cellular, or other active RF connectivity.
- Handheld-remote and touch-panel control capability shall remain available after a normal power cycle without requiring Contractor reprogramming.

3.3.3 World Clock Display Assembly

Quantity: 1

Make/Model Reference: LG

Required Salient Characteristics: LUQC048

- The World Clock is LED-based products made of COB (Chip on Board), and the pixel pitch should be around 1.25mm. The screen size should be approximately 1,200mm wide and 225mm high. Inside the conference room, one World Clock and one Classification Banner are installed, and outside the door, one Classification Banner is installed.
- World Clock requirements shall comply with the LED Requirements and LED Salient Characteristics incorporated into this PD, including the stated PSU redundancy exception.
- Verify World Clock operation, including at least six simultaneously configurable labeled time zones, authorized network time synchronization with drift within the PD requirement, 24-hour format, and automatic per-zone DST handling.
- The World Clock shall be controllable through both a manufacturer-supplied handheld remote control and the furnished room-control touch-panel interface.

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- The World Clock shall include not fewer than thirty (30) preconfigured selectable world time-zone presets. The touch-panel interface shall allow a user to select a preset by an intuitive location, city, region, or time-zone label without requiring Contractor programming changes.
- The World Clock shall automatically apply and remove Daylight Saving Time (DST) for configured locations that observe DST based on the applicable configured regional/time-zone rule and effective date. Routine seasonal DST changes shall not require manual time adjustment by the user or Contractor intervention.
- Locations that do not observe DST shall remain on the configured standard time without seasonal offset changes.
- Touch-panel control of the World Clock shall use a wired control path or other Government-approved non-wireless interface. Normal operation shall not require Wi-Fi, Bluetooth, cellular, or other active RF connectivity.

3.3.4 Heavy-Duty Commercial Wall-Mount System (BT8310XL or Equal)

Quantity: 1

Make/Model Reference: B-Tech BT8310XL or Equal

Required Salient Characteristics:

- Static load rating shall be at least 80 kg with a minimum safety factor of three.
- Supports VESA mounting patterns through at least 800 x 400 and shall be compatible with the furnished 86-inch display.
- Provides tilt adjustment of approximately +/-10 degrees or better.
- Provides post-installation lateral adjustment of at least +/-25 mm.
- Provides integral leveling capability.
- Provides a concealed or managed cable path.
- Includes fixings appropriate to the verified wall substrate and all rails/adapters/fasteners required for the accepted installation.
- Provides secure alignment and reasonable service access to display cabling and connections after installation.

3.3.5 LCD Requirements - Incorporated into this PD

The furnished 86-inch commercial displays shall comply with the following common LCD requirements, except where a room-specific subsection establishes a different minimum or explicitly states an exception.

- 1) Except where a room-specific subsection establishes a different minimum duty cycle, applicable LCD displays shall be current-market products capable of continuous professional operation appropriate to the stated room function. Prototype, under-development, or discontinued (End-of-Life) products shall not be used without prior written approval.
- 2) The display must be suitable for the client's defined mission environment (command and control room, situation room, meeting room, auditorium, etc.) and meet the LCD salient characteristics stated in this PD.
- 3) The display viewing angle must be at least 178 degrees horizontally / 178 degrees vertically, or an equivalent field of view.
- 4) The LCD screen must be a product that ensures stability against electromagnetic waves. (Class B and above)
- 5) LCD cabinets must be manufactured with minimal use of harmful substances and chemicals and must be products certified by RoHS in relation to these requirements.

3.3.6 LCD Salient Characteristics

- 1) To comply with the procurement policy of the U.S. government, the product must comply with the TAA (Trade Agreements Act) regulations, and the manufacturer must submit a TAA compliance letter.
- 2) The delivered LCD products must hold the Energy Star certification operated by the U.S. Environmental Protection Agency (EPA). The model must be listed on the official Energy Star website at the time of bidding.

3.3.7 LED Requirements - Incorporated into this PD

- 1) This product has to be in the market and capable of 24/7, 365 days operation without interruption. Prototype / under-development / Discontinued (End-of-Life) products cannot be used without prior written approval.
- 2) The display must be suitable for the client's defined mission environment (command and control room, control room, conference room, auditorium, etc.) and meet the LED salient characteristics stated in this PD.
- 3) The display viewing angle must be at least 160 degrees horizontally / 160 degrees vertically, or an equivalent viewing angle.
- 4) The display must be able to smoothly play content at a high refresh rate of over 7,680 Hz for a wider spectrum and vibrant video playback.
- 5) The LED screen must ensure stability against electromagnetic waves.
- 6) LED cabinets must be manufactured with minimal use of harmful substances and chemicals, and must be products certified with relevant RoHS certification.
- 7) The LED controller must provide at least 4K resolution and be equipped with software developed directly by the manufacturer to provide a user-friendly environment.
- 8) LED cabinets should be designed with PSU redundancy structures for power redundancy to ensure product stability. (However, World Clock and Classification Banner do not support redundancy)
- 9) LED cabinets should be designed so that step adjustment is possible both at the front and rear.

3.3.8 LED Salient Characteristics

- 1) To comply with the procurement policy of the U.S. government, both the LED display (screen section) and the controller must comply with the TAA (Trade Agreements Act) regulations, and manufacturers must submit a TAA compliance letter.
- 2) To ensure optimal compatibility between systems and guarantee unified technical support and rapid identification of responsibility in case of failure, the LED display (screen section) and controller must be manufactured by same manufacturer.
- 3) Content in the control room/meeting room must be displayed with uniform colors and without distortion, not only when viewed from the front but also from the left and right sides. Color shift must be minimal within a 60-degree from each side (total 120-degree) from the front of the screen, and a certificate from an official certification body must be submitted.
- 4) Since the control room mainly handles dark content such as nighttime surveillance footage and satellite images, accurate colors and brightness must be displayed to provide a seamless and natural screen. A certificate from an official certification body proving low-scale (Gray Scale) performance must be submitted.
- 5) Due to the nature of products installed indoors, reliability and safety must be ensured even in the event of a fire. Must have flame-retardant performance that suppresses flame spread through the product surface (equivalent to Class 1 or higher in BS476 Part 7 standard test). A test report or certificate from an accredited certification body that can provide proof of this must be submitted.
- 6) Even in extreme environments (temperature changes, strong vibration, humidity, etc.), physical properties must be maintained to prevent display issues in the LED display section. To achieve this, the core driver IC of the LED screen must comply with the MIL-STD-883 standard specified by the U.S. Department of Defense (US DoD), and supporting documentation must be submitted.
- 7) The front screen must be protected from dust to extend the product's lifespan and minimize defects. It must meet the dustproof rating of IP50 and submit relevant test reports.
- 8) Prevent product damage from collisions that may occur in everyday usage environments. It must meet the impact resistance rating IK07 and submit the relevant test report.

3.4 NETWORKED AV&C / DSP PROCESSOR

3.4.1 Networked AV&C/DSP Core Processor (Q-SYS Core Nano or Equal)

Quantity: 1

Make/Model Reference: Q-SYS Core Nano

Required Salient Characteristics:

- Provides at least 64 x 64 networked audio I/O channels over Q-LAN/AES67 or equivalent standards-based network audio.
- Provides at least eight (8) acoustic echo cancellation processors.
- Includes at least 8 x 8 software-based Dante channels and supports expansion to at least 32 x 32 Dante channels through licensing or equivalent capability.
- Provides USB AV/audio bridging to a host PC with at least 8 x 8 USB audio channels at 48 kHz for conferencing integration.
- Supports at least two VoIP instances or equivalent telephony integration capability.
- Provides at least two independent LAN interfaces permitting separation of media and management traffic.
- Provides at least two serial control ports and a full-featured control engine or equivalent third-party device-control capability.
- Operates at 48 kHz sampling with 24-bit conversion or better.
- THD+N shall be 0.01 percent or less and dynamic range at least 105 dB, or equivalent professional performance.
- Supports automatic microphone mixing, feedback suppression, noise reduction, parametric EQ, delay, ducking, compression, routing, and loudspeaker output processing.
- Provides an IP control API and third-party control module capability.
- Provides sufficient DSP resources for the two furnished networked boundary microphones, Government-furnished codec/PC, active/passive loudspeaker architecture, and accepted J5 conferencing design.
- All software licenses required for the delivered configuration shall be furnished, activated, and registered to or otherwise fully transferable/administerable by the Government.
- Supports configuration backup/restore and delivery of the native editable AV&C/DSP project/configuration.
- Half-rack or similarly compact professional form factor suitable for rack installation.
- Normal operation shall not require unauthorized wireless or cloud connectivity.

3.5 AUDIO-TECHNICA MICROPHONES

3.5.1 Networked Boundary Microphone (ATND971A or Equal)

Quantity: 2

Make/Model Reference: ATND971A

Required Salient Characteristics:

- Dante-enabled boundary condenser microphone with Ethernet network output.
- Powered by PoE (IEEE 802.3af).
- Half-cardioid pickup pattern; frequency response 30 Hz-20 kHz.
- Integrated capacitive touch switch with red/green LED status indicator.
- Supports gain, low-cut filter, and LED control.
- UniGuard RFI-shielding and UniSteep low-cut filtering.
- Compatible with AES67/Dante network audio operation.

3.6 NETWORKING AND CAPTURE EQUIPMENT

3.6.1 Managed PoE+ AV Network Switch (GSM4230PX or Equal)

Quantity: 1

Make/Model Reference: NETGEAR GSM4230PX or Equal

Required Salient Characteristics:

- Purpose-built or suitable for professional AV-over-IP environments and stable operation of the furnished networked AV endpoints.
- Supports managed multicast traffic including IGMP snooping and querier functionality and QoS prioritization appropriate for real-time AV traffic.
- Provides at least 24 Gigabit PoE+ access ports and at least four 1/10 Gigabit SFP+ uplink ports, or equivalent connectivity sufficient for the furnished endpoint assignment.
- Provides PoE/PoE+ capability with sufficient aggregate power budget for the network-powered AV endpoints assigned to the switch.
- Supports VLAN configuration and enterprise network authentication/security features including IEEE 802.1X where implemented by the Government.
- Shall be rack-mountable, current-production equipment suitable for professional AV deployment.

3.6.4 HDMI-to-USB 4K Capture Interface (BU113G2 or Equal)

Quantity: 1

Make/Model Reference: AVerMedia BU113G2 or Equal

Required Salient Characteristics:

- Professional external capture interface suitable for integrating an HDMI video source with a Government-furnished compute or conferencing endpoint over USB.
- Provides HDMI 2.0 video input and USB 3.2 Gen 1 Type-C or equivalent 5 Gbps host interface.
- Accepts input resolutions up to at least 3,840 x 2,160 at 60 Hz.
- Supports capture up to 3,840 x 2,160 at 60 fps using a supported compressed capture format, and at least 1,920 x 1,080 at 60 fps using common USB video formats.
- Provides plug-and-play USB video capture compatibility with standard conferencing/streaming applications supported by the Government endpoint.
- Shall include required USB cable, firmware, and standard accessories necessary for the accepted J5 integration.
- Wireless connectivity shall not be required for operation.

3.7 RACK, INSTALLATION CONSUMABLES, AND INCIDENTAL MATERIALS

3.7.2 Custom AV Equipment Rack

Quantity: 1

Required Salient Characteristics:

- Provides at least 12 RU of usable equipment space on EIA-310 19-inch rails.
- Provides front and rear service access.
- Provides a lockable door using an appropriate keyed cylinder.
- Includes cooling fans or equivalent active ventilation sufficient for the installed equipment load.
- Provides vertical and horizontal cable management.
- Shall be bonded to the Government-provided protective earth reference.
- Finish and dimensions shall be coordinated with the room installation and adjacent furnishings.

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- Includes all rack hardware, blanking panels, shelves, mounting accessories, and internal power/cable-management provisions necessary for the accepted installation.

3.7.3 Installation Consumables

Quantity: 1 lot

Required Salient Characteristics:

- Category 6 or higher balanced twisted-pair cabling shall be used for furnished AV network links and terminated using matching-category components.
- All installed balanced twisted-pair network links shall pass Category 6 or higher permanent-link certification.
- Plenum-rated cable shall be used where installed in air-handling spaces.
- Local HDMI runs shall use Premium-certified copper or active optical cabling appropriate to required distance and resolution.
- Analog audio runs shall use balanced shielded audio cable where applicable.
- Provide galvanized conduit, cable tray, grommets, penetrations, and other containment required within the authorized low-voltage scope.
- Provide listed fire-stopping at rated penetrations where disturbed by the Contractor.
- Provide all labels, ties, supports, connectors, terminations, adapters, fasteners, patch cables, and miscellaneous materials necessary for a complete installation.
- All field cables and terminations shall be durably labeled at both ends using a consistent identification scheme reflected in the final cable schedule.

4.0 INCIDENTAL INSTALLATION, CONFIGURATION, AND INTEGRATION REQUIREMENTS

4.1 Delivery and Installation Coordination

- Coordinate site access, delivery, incidental installation sequencing, functional verification, product familiarization, and Government inspection/witness activities necessary for turnover of the furnished system.
- Maintain a delivery and installation completion schedule and identify technical dependencies or Government-furnished prerequisites early enough to avoid delivery impact.

4.2 Existing Equipment Removal Incidental to Installation

- Remove only equipment identified by the Government for replacement.
- Recover reusable cabling where directed and protect Government property from damage.
- Stage removed Government property at the location directed by the Government; disposal is not authorized unless expressly directed.

4.3 Incidental Installation and Physical Integration

- Install the 86-inch commercial UHD display and wall mount, both Classification Banners, World Clock display, one PTZ cameras, microphones, active/passive ceiling speaker, AV&C/DSP processor, managed AV network switch, control processor, tabletop touch panel, rack, capture interface, and associated accessories in accordance with manufacturer requirements and approved site conditions.
- Perform rack assembly, field cabling, terminations, labeling, endpoint connection, cable dressing, and final equipment securing.
- Verify mounting surfaces and installation clearances before installation. Any condition requiring structural modification outside this PD shall be reported to the Government before proceeding.

4.4 System Configuration - Control and AV-over-IP

- Program the furnished control processor and touch-panel user interface for complete J5 room operation.

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- Configure the furnished AV-over-IP encoders/decoders for required source selection, display routing, scaling, and AV-over-IP operation.
- Provide intuitive operational modes for normal presentation, VTC, camera control, audio control, display control, and system shutdown/startup as applicable.
- Deliver all uncompiled/source programming files, compiled files, device configuration files, credentials established specifically for the system, and final backups to the Government at turnover. Files shall be provided in the native editable format used to create the accepted configuration, together with the applicable software and version identification.
- All programming and configuration files shall be delivered without contractor-controlled passwords, proprietary locks, or other restrictions that would prevent the Government or its authorized support personnel from accessing, backing up, restoring, maintaining, or modifying the accepted system. Any manufacturer-controlled license inherently required for operation shall be identified to the Government and transferred or documented as applicable at turnover.
- Configure the furnished AV-over-IP routing, 86-inch display source assignment/scaling, Classification Banner functions, World Clock functions, and Government-approved room-control workflows; integrate all normal user functions with the furnished room-control touch-panel interface.
- Integrate both Classification Banners and the World Clock with the furnished room-control touch-panel interface while preserving manufacturer-supplied handheld-remote operation where such remote control is furnished by the accepted product.
- Program the World Clock touch-panel workflow to provide access to not fewer than thirty (30) preconfigured time-zone presets
- Configure World Clock time-zone and DST behavior so that applicable seasonal DST transitions occur automatically according to the configured location/time-zone rule.

4.5 System Configuration - PTZ Camera and Conferencing Workflow

- Configure a furnished PTZ camera for Government-approved participant, presenter, and display-wall coverage.
- Program not fewer than sixteen Government-approved operational presets across the furnished PTZ-camera system as required by the accepted J5 design, with preset recall within two seconds.
- Provide touch-panel camera selection and preset recall for routing the selected camera to the Government-furnished codec and room presentation/soft-codec PC.
- Integrate the Government-furnished quad camera bar with the Government-furnished codec and configure the system so its framing behavior does not conflict with the furnished PTZ-camera presets.
- Configure camera control using wired RS-232 and/or IP methods and provide the accepted HDMI/IP/USB camera paths without unauthorized wireless dependency.
- Validate camera coverage, presets, switching/selection, GFE codec/quad-camera-bar integration, touch-panel operation, and audio/video synchronization before acceptance.

4.6 System Configuration - DSP, AEC, Audio, and GFE Conferencing Integration

- Configure the furnished networked AV&C/DSP processor for microphone processing, AEC, automatic mixing, equalization, dynamics, routing, USB AV/audio bridging, network audio, and loudspeaker output processing required by the accepted J5 design.
- Integrate the two furnished networked boundary microphones with the AV&C/DSP processor, Government-furnished codec/soft-codec PC, and room-control mute/status functions.
- Configure the active network loudspeaker and passive companion loudspeaker so the accepted design preserves AES67/network-audio interoperability, active-speaker amplification/distribution, onboard loudspeaker processing, and professional room coverage.
- Integrate the Government-furnished codec and room presentation/soft-codec PC for full-duplex, echo-free conferencing audio.

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- Configure USB AV/audio bridging to the Government-furnished PC and balanced/network audio send/receive paths to the Government-furnished codec as required by the accepted design.
- Configure all required software licenses and entitlements for the AV&C/DSP processor and register them to or otherwise place them under Government administration at turnover.
- Optimize gain structure, AEC, microphone pickup, loudspeaker level, equalization, delay, and dynamics to provide intelligible speech without unacceptable echo, feedback, clipping, hum, buzz, dropout, or distortion.

4.7 Classification Banner and World Clock Application

- For optimal stability of the developed application, the classification banner and world clock apps must be fully compatible and operate flawlessly within the manufacturer-designated signage OS environment.
- Installing and connecting a standalone computer or using external storage devices such as USB drives is strictly prohibited.
- All controls must be fully operable through the control touch panel and the remote control provided by the manufacturer.
- Additionally, at the time of submitting the bid proposal, the vendor must provide documentation that clearly proves the feasibility of implementing these requirements.

5.0 INSPECTION, FUNCTIONAL VERIFICATION, AND ACCEPTANCE

Prior to Government acceptance, the Contractor shall perform the functional checks and integrated system verification necessary to demonstrate that the furnished end item conforms to this PD. Government acceptance shall be based on verification of the delivered equipment, required quantities, salient characteristics, integrated functionality, and required technical data.

5.1 Minimum Functional Verification

- Verify all contracted equipment and quantities against Section 2.0.
- Verify the 86-inch commercial UHD display provides 3840 x 2160 native resolution, at least 350 cd/m2 brightness, stable presentation, correct AV-over-IP source routing/scaling, secure mounting, and Government-approved power/input control.
- Verify both Classification Banners required 24-hour-duty capability documentation, portrait/landscape support as applicable, wired room-control operation, and Government-administered content/layout modification capability.
- Verify World Clock operation, including at least six simultaneously configurable labeled time zones, authorized network time synchronization with drift within the PD requirement, 24-hour format, and automatic per-zone DST handling.
- Verify World Clock manufacturer-supplied handheld-remote operation where furnished and control through the furnished room-control touch panel.
- Verify not fewer than thirty preconfigured World Clock time-zone presets are selectable through the touch panel using intuitive location/time-zone labels.
- Verify automatic DST behavior for a DST-observing configured location using a manufacturer-supported test method, controlled date/time simulation, or equivalent verification method.
- Verify World Clock and Classification Banner settings persist through a normal restart or are restored automatically from the accepted configuration.
- Verify source switching completes within three seconds for the accepted J5 workflow and that every intended source routes to every intended destination without routing failure or unacceptable artifact.
- Verify room-control and tabletop touch-panel functions, including normal startup/shutdown, source selection, display control, PTZ-camera selection/preset recall, audio control, Classification Banner/World Clock functions, GFE conferencing controls, and recovery after a normal restart/power cycle.
- Verify a PTZ cameras provide 1080p60, at least 20x optical zoom, required wired outputs/control, stored preset recall within two seconds, touch-panel camera selection, and accepted codec/PC routing.

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- Verify Government-furnished codec, navigator, quad camera bar, and PC operate through the integrated room system with no conflict between quad-camera-bar behavior and the furnished PTZ-camera presets.
- Verify microphone pickup, AV&C/DSP routing, AEC operation, USB AV/audio bridging, codec audio, active/passive loudspeaker output, audio clarity, and absence of unacceptable echo, feedback, hum, clipping, distortion, or dropout.
- Verify a continuous full-duplex conferencing call of at least fifteen minutes exhibits no audible echo, clipping, or dropout attributable to the furnished system.
- Verify managed AV network switch endpoint connectivity, VLAN/IGMP/QoS behavior, PTP/802.1AS timing where applicable, and PoE delivery without exceeding the switch PoE budget.
- Verify the furnished HDMI-to-USB capture interface with the assigned Government-furnished endpoint, including stable 1080p60 capture from an accepted source and capture latency not exceeding 80 ms.
- Verify 100 percent of installed Category 6 or higher links pass permanent-link certification.
- Verify cable/termination integrity, rack workmanship, display mounting, labeling, grounding/bonding within Contractor scope, and installation workmanship.
- Verify all required software licenses are activated and registered to or otherwise placed under Government administration and that the license record matches the delivered configuration.

5.2 Acceptance Deficiencies

Any failed or noncompliant item shall be corrected, reconfigured, repaired, or replaced at no additional cost to the Government and retested. Final acceptance shall occur only after all critical deficiencies are closed and all required turnover documentation is delivered.

6.0 SUPPLY SUBMITTALS AND TECHNICAL DATA

- Equipment submittal listing manufacturer, model, quantity, applicable TAA status, and required manufacturer/authorized-source compliance evidence for each applicable item.
- Manufacturer-issued or manufacturer-authorized TAA documentation where required by this PD.
- Manufacturer technical documentation supporting the specified display, mount, camera, network, audio, AV&C/DSP, control, microphone, loudspeaker, and capture requirements.
- Line-by-line salient-characteristic compliance matrix for any proposed or equal item.
- Pre-installation system design package, including final proposed rack elevation, equipment layout, 86-inch display/mount detail, Classification Banner and World Clock locations, PTZ-camera positions, microphone/loudspeaker positions, signal-flow diagram, AV/network logical diagram, cable schedule, endpoint/port assignment, device addressing/configuration plan, and GFE integration points including the codec, navigator, quad camera bar, and PC.
- As-built drawings showing final equipment locations, display/mount locations, camera/microphone/loudspeaker locations, cable routing, and rack configuration.
- Final native editable and compiled room-control programming, touch-panel project, AV-over-IP configuration backups, PTZ-camera configuration/preset records, AV&C/DSP configuration, managed-switch configuration, Classification Banner/World Clock configuration, and other device/system configuration files.
- Functional verification and acceptance record with pass/fail results, network soak/latency results, burn-in results, identified deficiencies, corrective actions, and retest results.
- Operator quick-reference guide, administrator guide, manufacturer warranty information, and Contractor warranty procedures.
- License/entitlement record identifying all software licenses required for the delivered AV&C/DSP configuration and evidence that the Government can administer or sustain those licenses after turnover.
- Deliver all uncompiled/source programming files, compiled files, device configuration files, credentials established specifically for the system, and final backups to the Government at turnover. Files shall be provided in the native editable format used to create the accepted configuration, together with the applicable software and version identification.

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- Programming and configuration files shall be delivered without Contractor-controlled passwords, proprietary locks, or other restrictions that prevent Government sustainment. Manufacturer-controlled licenses or activation mechanisms shall be identified, transferred where transferable, and fully documented.

7.0 PRODUCT FAMILIARIZATION AND TURNOVER

- As an incidental part of system turnover, provide one on-site end-user product familiarization session covering normal room operation, source selection, VTC operation, PTZ-camera selection/presets, GFE quad-camera-bar interaction, content sharing, audio controls, 86-inch display operation, Classification Banner operation, World Clock remote/touch-panel operation, World Clock preset/custom-location functions, system startup/shutdown, and basic troubleshooting.
- As an incidental part of system turnover, provide one on-site administrator product familiarization session for designated Government personnel covering startup/shutdown, AV-over-IP configuration awareness, managed-switch status, room-control/touch-panel backups, PTZ-camera preset/configuration awareness, AV&C/DSP configuration backup/restore, Classification Banner administration, World Clock preset/custom-location/DST administration, GFE integration awareness, first-line troubleshooting, and warranty procedures.
- Provide electronic product familiarization materials and quick-reference guides in PDF format.

8.0 DELIVERY, INCIDENTAL INSTALLATION, AND ACCESS

Delivery and incidental installation shall be coordinated with the Government POC. The Contractor shall provide at least five business days advance notice for major deliveries unless otherwise approved.

- Delivery location: USFK Headquarters, Camp Humphreys, Republic of Korea; exact building/room information will be provided by the Government POC.
- Normal delivery and incidental installation windows shall be coordinated to avoid J5 mission disruption and may be adjusted by the Government.
- All personnel and vehicles shall comply with installation access, security screening, escort, and safety requirements.
- The Contractor shall remove packaging, debris, and installation waste and leave affected areas clean and serviceable.

9.0 WARRANTY

The Contractor shall provide a two-year warranty, at no additional cost to the Government, covering defects in contractor-provided supplies, workmanship associated with incidental installation, programming, and configuration. Manufacturer warranties shall remain in effect according to their separate terms and shall not reduce the Contractor warranty obligation. The Contractor warranty shall not reduce or replace any longer manufacturer warranty. Where an applicable manufacturer warranty exceeds two years, the Government shall retain the full benefit of that manufacturer warranty.

- Contractor response to Government warranty notification: within 1 business day.
- Critical deficiencies affecting room operation shall be corrected within 5 business days or according to an alternate schedule approved by the Government.
- Warranty corrective action shall include troubleshooting of integrated system interactions when required to restore the furnished system to the accepted operating condition.
- All corrected programming/configuration changes shall be reflected in updated Government turnover files.

10.0 SECURITY, NETWORK, AND CONFIGURATION CONTROL

- Contractor personnel shall comply with USFK installation security and access requirements.
- No wireless functionality shall be enabled where prohibited by Government configuration. Government-version furnished devices shall retain the security-related feature limitations specified in the applicable salient characteristics.

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- Contractor-owned laptops, test devices, removable media, or cloud services shall not be connected to or used with Government networks/systems unless specifically authorized.
- Network configuration changes affecting Government-managed infrastructure shall be performed only by authorized Government network personnel or under explicit Government direction.
- Default credentials shall be changed where applicable; final Government-owned credentials/configuration records shall be turned over securely to the designated Government representative.
- Remote manufacturer or Contractor support associated with furnished equipment shall use only a Government-approved connection method, during a pre-coordinated session, and while attended by Government personnel. Persistent, unattended, or vendor-initiated remote access is prohibited.

11.0 DELIVERY AND COMPLETION SCHEDULE

The Contractor shall complete all equipment procurement and delivery no later than 120 days after contract award. The Contractor shall complete installation, configuration, integration, functional verification, product familiarization, technical-data turnover, and all actions required for Government acceptance no later than 150 days after contract award. All work shall be performed in accordance with the delivery and completion requirements established by the Contracting Officer.

12.0 ORDER OF PRECEDENCE FOR TECHNICAL INTERPRETATION

For technical administration of this requirement, the following order shall apply unless the Contracting Officer directs otherwise in writing: (1) awarded contract terms and conditions; (2) this Purchase Description and incorporated changes; (3) the Statement of Work for execution-scope requirements; (4) approved Government drawings/submittals; (5) approved Contractor submittals; and (6) manufacturer installation/configuration instructions. In the event of a conflict involving equipment quantity, salient characteristics, minimum technical performance, product compliance documentation, or the required supply configuration, this Purchase Description shall govern. The Statement of Work shall govern the Contractor execution scope necessary to deliver the supplied end item in its accepted operational condition, except where inconsistent with this Purchase Description or the awarded contract. The equipment and quantities identified in Section 2.0 constitute the required quantity and configuration baseline for this acquisition.