

USFK KIM CONFERENCE ROOM AV/VTC SYSTEM UPGRADE - SUPPLY

PURCHASE DESCRIPTION (PD)

United States Forces Korea (USFK)

Requirement	KIM 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 KIM 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) KIM Conference Room. The furnished system shall support mission-critical collaboration, command and staff coordination, operational updates, senior-leader engagements, multi-source visualization, and reliable conferencing operations.

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 the KIM 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 KIM 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, load-bearing structural alteration, or facility network infrastructure construction is included. Limited surface opening/removal and mounting-support preparation directly necessary to install the furnished primary and secondary LED systems are included as incidental installation activities.
- 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 KIM mission operations.

- Contractor-owned computing devices shall not be connected to Government networks unless expressly authorized by the Government.
- 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	TSW-1080-GV-B or Equal	10.1-inch wall-mounted room-control touch panel, Government/non-wireless configuration	1	unit	3.2.1
2	Crestron	DM-NVX-E20 or Equal	4K60 AV-over-IP encoder for networked signal distribution	10	unit	3.2.2
3	Crestron	DM-NVX-D200 or Equal	4K60 AV-over-IP decoder with integrated scaler	15	unit	3.2.3
4	Crestron	CP4N or Equal	secure network-enabled enterprise room-control processor	1	unit	3.2.4
5	Crestron	IV-CAM-P20-GV-B or Equal	20x optical-zoom PTZ conferencing camera, Government/non-wireless configuration	7	unit	3.2.5
6	Crestron	IV-CAM-I20-GV-B or Equal	intelligent 20x PTZ conferencing camera with onboard AI	1	unit	3.2.6
7	Crestron	IV-SAM-VX2-P or Equal	on-premises automated multi-camera switching platform supporting at least eight cameras	1	unit	3.2.7
8	Crestron	IV-PROSERVICE-1B or Equal	manufacturer-level camera-system deployment and validation support, ancillary to supplied camera system	1	lot	3.2.8
9	Crestron	SAROS DM-NAX-IC4A-W or Equal	active PoE+ in-ceiling network-audio loudspeaker	3	unit	3.2.9
10	Crestron	SAROS IC4P-W or Equal	passive full-range in-ceiling companion loudspeaker	9	unit	3.2.10
11	LG	Fine-Pitch dvLED System or Equal	primary 15 x 5 / 75-cabinet fine-pitch direct-view LED wall	1	system	3.3.1
12	Custom	Primary LED Support Structure	purpose-built support structure for primary LED wall	1	lot	3.7.1
13	LG	Fine-Pitch dvLED System or Equal	secondary 10 x 5 / 50-cabinet fine-pitch direct-view LED wall	1	system	3.3.2
14	Custom	Secondary LED Support Structure	purpose-built support structure for secondary LED wall	1	lot	3.7.2
15	Commercial	32-inch UHD Display or Equal	32-inch commercial auxiliary information display	3	unit	3.3.3
16	Commercial	Display Wall Mount or Equal	commercial wall mount compatible with furnished 32-inch display	3	unit	3.3.4
17	LG	LUQC048	COB LED classification banner display assembly	5	unit	3.3.5
18	LG	LUQC048	COB LED multi-time-zone information display assembly	1	unit	3.3.6
19	Biamp	TesiraFORTE X 1600 or Equal	conferencing DSP with 16-channel-or-greater AEC and two-chain processing capability	1	unit	3.4.1
20	Audio-Technica	ATND971A or Equal	networked boundary microphone	10	unit	3.5.1
21	NETGEAR	GSM4230PX	M4230-series managed PoE+ AV network switch	1	unit	3.6.1
22	NETGEAR	GSM4248PX or Equal	managed AV network switch, 40-port-class PoE+ with 8 x 1/10GbE uplinks	1	unit	3.6.2
23	Datapath	VSN V3 or Equal	multi-output UHD video-wall processor for dual independently addressable LED canvases	1	unit	3.6.3
24	AVerMedia	BU113G2 or Equal	HDMI-to-USB capture interface	1	unit	3.6.4
25	Custom	AV Equipment Rack	integrated AV rack with minimum 12 RU usable	1	unit	3.7.3

Item	Manufacturer	Model / Reference	Description	Qty	U/I	PD Section
			space			
26	Custom	Wired Hardware Mute Control	dedicated wired latching microphone mute control with illuminated state indication	1	unit	3.7.4
27	Various	Installation Consumables	AV cabling, containment, connectors, terminations, labels, supports, firestopping, and miscellaneous installation hardware	1	lot	3.7.5

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.
- LED wall mounting, 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.
- Automated multi-camera workflow configuration and integration of the furnished camera system.
- DSP/AEC configuration, audio tuning, and microphone optimization required for accepted system performance.
- 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 KIM 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. Wall Mount Touch Screen, Government Version (TSW-1080-GV-B or Equal)

Quantity: 1

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

Required Salient Characteristics:

- 10.1 in. widescreen active-matrix color display with 1920 × 1200 WUXGA resolution.
- Projected capacitive touch screen with 5-point multitouch capability.
- Supports custom-programmable virtual control buttons.
- Supports standards-based HTML5 custom user interface projects.

- 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 × 2160 at 30 fps, with bitrate up to 25 Mbps.
- Provides Gigabit Ethernet connectivity with PoE/PoE+ power support.
- Provides a USB-C port for supported room scheduling and conferencing accessories.
- Provides enterprise-grade security and authentication.
- Government Version shall eliminate microphone, Bluetooth communications beacon, Wi-Fi network connectivity, and proximity sensor.
- Supports Microsoft Device Ecosystem Platform (MDEP) operating environment.
- Provides die-cast housing construction suitable for long-term commercial and government installations.
- Supports interoperability with supported hallway-sign and room-availability accessories.

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

Quantity: 10

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: 15

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 × 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.
- 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, cameras, video-wall processing, 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: 7

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

Required Salient Characteristics:

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

3.2.6 Intelligent PTZ Conferencing Camera, Government Version (IV-CAM-I20-GV-B or Equal)

Quantity: 1

Make/Model Reference: Crestron IV-CAM-I20-GV-B

Required Salient Characteristics:

- Government-version intelligent PTZ conferencing camera suitable for Government deployment.
- Supports video resolutions up to 1080p60.
- Provides 20× optical zoom.
- Supports video resolutions up to 1080p60 and provides at least 20x optical zoom.
- Provides onboard Visual AI processing for intelligent camera tracking without requiring an external processing computer, external AI server, or AI accelerator appliance.
- Supports presenter tracking, group tracking, and configurable preset zones.
- Provides automatic pan, tilt, zoom, and participant-framing capability with dual camera technology.
- Supports intelligent tracking at distances suitable for participants approximately 15–50 ft from the camera.
- Compatible with the furnished automated multi-camera system.
- Provides a single Ethernet connection supporting PoE, configuration, control, and IP video.
- Provides video outputs including 3G-SDI, HDMI, USB, NDI|HX2, ONVIF, RTSP, and UVC.
- Supports up to 256 configurable presets.
- Supports integration with enterprise conferencing platforms including Microsoft Teams Rooms and Zoom Rooms.
- Supports intelligent tracking independent of conferencing platform or conferencing-codec manufacturer.

3.2.7 On-Premises Automated Multi-Camera Switching System (IV-SAM-VX2-P or Equal)

- Provides voice-activated automatic multi-camera switching based on the active speaking participant.
- Supports at least 3 SDI or 5 NDI|HX camera/video sources, plus one additional USB camera source.
- Provides SDI and NDI program outputs suitable for integration with the furnished conferencing environment.
- Uses intelligent switching logic designed to follow the conversation while minimizing unnecessary camera changes.
- Provides AI-based automatic framing and reframing to maintain appropriate participant composition.
- Provides browser-based graphical room configuration without requiring manual PTZ preset programming for normal speaker-tracking configuration.
- Supports configurable multi-source video layouts and insertion of titles, logos, and backgrounds.
- Provides built-in video recording and streaming capability, including H.264 program recording and internal storage.
- Supports streaming to an RTMP server.
- Supports NDI input and program output.
- Provides IP-based control of compatible PTZ and intelligent tracking cameras.
- Provides a REST API over TCP/IP or equivalent documented control interface for third-party room-control integration.
- Provides network interfaces supporting up to 2.5 Gigabit Ethernet.
- Supports integration with external conferencing codecs and platforms including Microsoft Teams and Zoom Rooms.
- Supports automated camera and microphone position measurement and calibration workflows for room commissioning.
- Supports operation without requiring a dedicated GPU workstation.

3.2.8 Camera Systems Remote Deployment and Validation Support (IV-PROSERVICE-1B or Equal)

Quantity: 1

Make/Model Reference: Crestron IV-PROSERVICE-1B

- The furnished automated multi-camera system shall include manufacturer-level or manufacturer-authorized remote deployment and validation support necessary to commission and validate the delivered end item.
- Includes pre-installation review and recommendations for placement and configuration of the furnished automated multi-camera system, intelligent cameras, and interfacing microphone system.
- Provides remote system validation following installation and configuration.
- Validation shall include, as applicable, camera tracking, active-speaker response, microphone sensitivity, audio/video lip synchronization, control-system/API integration, and overall automated multi-camera system functionality.
- Shall support validation of the furnished Kim Conference room automated multi-camera room configuration.

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

Quantity: 3

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

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 three 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: 9

Make/Model Reference: Crestron SAROS IC4P-W or Equal

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 DISPLAY EQUIPMENT AND DISPLAY REQUIREMENTS

3.3.1 Primary Front-Wall Fine-Pitch Direct View LED System (LG MAGNIT G2 / LMPB007 or Equal)

Quantity: 1 complete system

Make/Model Reference: LG MAGNIT G2 / LMPB007

Required Salient Characteristics:

- LED display on the front side of the room must have a resolution of at least 11520 x 2160, and the screen size should be approximately 900cm wide / 168.75cm high. The pixel pitch of the LED display must be COB (Chip On Board) with a pitch of 0.78mm or less. Nominal brightness shall be at least 500 cd/m² with peak brightness capability of at least 1,000 cd/m².
- The main LED display shall comply with all LED Requirements and LED Salient Characteristics incorporated into this PD.

Performance Basis: The specified minimum resolution of 11,520 x 2,160, approximately 9.0 m x 1.6875 m display area, COB architecture with a pixel pitch of 0.78 mm or less, and the associated viewing-angle, refresh-rate, color-uniformity, gray-scale, safety, environmental, and durability requirements establish the minimum mission-performance baseline for the KIM Conference Room primary visualization environment. Proposed substitutions shall meet or exceed this complete performance baseline without reducing required system capability.

3.3.2 Secondary Side-Wall Fine-Pitch Direct View LED System (LG MAGNIT G2 / LMPB007 or Equal)

Quantity: 1 complete system

Make/Model Reference: LG MAGNIT G2 / LMPB007

Required Salient Characteristics:

- LED display on the side of the room must have a resolution of at least 7680 x 2160, and the screen size should be approximately 600cm wide / 168.75cm high. The pixel pitch of the LED display must be COB (Chip On Board) with a pitch of 0.78mm or less.
- The secondary LED display shall comply with all LED Requirements and LED Salient Characteristics incorporated into this PD.

Performance Basis: The specified minimum resolution of 7,680 x 2,160, approximately 6.0 m x 1.6875 m display area, COB architecture with a pixel pitch of 0.78 mm or less, and the associated viewing-angle, refresh-rate, color-uniformity, gray-scale, safety, environmental, and durability requirements establish the minimum mission-performance baseline for the KIM Conference Room secondary visualization environment. Proposed substitutions shall meet or exceed this complete performance baseline without reducing required system capability.

3.3.3 32-Inch Commercial Auxiliary Information Display (LG 32BP55U or Equal)

Quantity: 3

Make/Model Reference: LG 32BP55U

Required Salient Characteristics:

- 32-inch class commercial display intended for auxiliary information viewing on the KIM Conference Room pillars.
- A total of three displays shall be furnished and installed on the conference room pillars.
- Each display shall be compatible with the furnished AV-over-IP distribution system and shall accept the required digital video signal from the associated decoder/output endpoint.
- Each display shall comply with the LCD Requirements and LCD Salient Characteristics incorporated into this PD.

3.3.4 Commercial Display Wall Mount (B-Tech BT8310XL or Equal)

Quantity: 3

Make/Model Reference: B-Tech BT8310XL

Required Salient Characteristics:

- Heavy-duty commercial display mounting hardware suitable for the furnished 32-inch auxiliary displays and designated pillar installation locations.
- Mounting hardware shall provide secure attachment, appropriate load capacity, and manufacturer-approved compatibility with the furnished displays and installation substrate.

3.3.5 Classification Banner Display Assembly

Quantity: 5

Make/Model Reference: LG / LUQC048

Required Salient Characteristics:

- The Classification Banners are 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.
- The five Classification Banners correspond to one Classification Banner inside the conference room and four Classification Banners 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.

3.3.6 World Clock Display Assembly

Quantity: 1

Make/Model Reference: LG / LUQC048

Required Salient Characteristics:

- The World Clock are 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.
- The World Clock shall be controllable through both a manufacturer-supplied handheld remote control and the furnished room-control touch-panel interface.
- 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.
- World Clock configuration, including the minimum thirty (30) preset time zones, custom user-defined entries, displayed location labels, and applicable DST/time-zone rules, shall be retained through a normal power cycle or restored automatically from the accepted system configuration.
- 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.

3.3.7 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.

3.3.9 LCD Requirements - Incorporated into this PD

The following LCD requirements shall apply only to any LCD specifically authorized by the Government as an approved substitution or ancillary display under this requirement.

- 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, 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.

3.3.10 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.

3.4 BIAMP DSP EQUIPMENT

3.4.1 Biamp TesiraFORTE X 1600 DSP (or Equal)

Quantity: 1

Make/Model Reference: Biamp TesiraFORTE X 1600 or Equal

Required Salient Characteristics:

- Provides at least sixteen channels of acoustic echo cancellation with AEC tail length of at least 200 ms.
- Provides at least four integrated IEEE 802.3at PoE+ ports for networked microphones, or an equivalent integrated/managed microphone-network architecture.
- Supports AES67 and AVB (IEEE 802.1BA) or equivalent standards-based professional audio-over-IP transport.
- Provides at least two balanced analog inputs and two balanced analog outputs.
- Provides a stereo USB audio-device interface for Government-furnished soft-codec conferencing.
- 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 device discovery and room auto-tuning or equivalent commissioning assistance.
- Supports automatic microphone mixing, feedback suppression, noise reduction, parametric EQ, delay, ducking, and compression.
- Provides capacity to serve two independent conferencing chains using separate processing paths with no unintended inter-chain audio path.
- Provides speaker-location, microphone-channel activity, or equivalent data usable by the furnished automated camera-switching system.
- Accepts hardware-mute state/control input from the furnished room-control processor so the dedicated wired mute control can mute all microphone inputs within the required response time.
- Provides an IP control API and third-party room-control integration capability.
- Supports configuration backup/restore and delivery of the native editable DSP project/configuration.
- Does not require unauthorized cloud connectivity for normal operation.

3.5 AUDIO-TECHNICA MICROPHONES

3.5.1 Networked Boundary Microphone (ATND971A or Equal)

Quantity: 10

Make/Model Reference: Audio-Technica ATND971A

Required Salient Characteristics:

- Provides digital audio output over AES67-compliant or equivalent standards-based audio-over-IP.
- Powered by IEEE 802.3af PoE.
- Supports selectable cardioid and omnidirectional polar patterns or an equivalent accepted room-coverage capability.
- Frequency response shall be approximately 20 Hz to 20 kHz.
- Signal-to-noise ratio shall be at least 60 dB A-weighted.
- Maximum SPL shall be at least 110 dB.

- Provides integral mute control with status indication.
- Uses a low-profile table-surface form factor with concealed cable exit.
- Shall integrate with the furnished conferencing DSP, room-control system, automated-camera workflow, and both Government-furnished conferencing chains.
- Shall not require wireless connectivity.

3.6 NETWORKING AND VIDEO-WALL PROCESSING EQUIPMENT

3.6.1 Managed PoE+ AV Network Switch, 40-Port Class (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.

3.6.2 Managed PoE+ AV Network Switch, 40-Port Class (GSM4248PX or Equal)

Quantity: 1

Make/Model Reference: NETGEAR GSM4248PX or Equal

Required Salient Characteristics:

- Provides at least forty 1 GbE PoE+ access ports supporting IEEE 802.3af/at.
- Provides at least eight 1/10 GbE SFP+ uplink ports.
- Aggregate PoE budget shall be at least 960 W.
- Provides non-blocking switching performance suitable for the furnished AV-over-IP and audio-over-IP streams.
- Supports Layer 2+/Layer 3-lite functions including static routing.
- Supports IEEE 802.1Q VLANs.
- Supports IGMP snooping v2/v3 with querier and fast-leave capability.
- Supports DiffServ QoS with strict-priority queuing or equivalent deterministic AV traffic prioritization.
- Supports IEEE 1588 PTPv2 boundary-clock capability and IEEE 802.1AS or equivalent timing support appropriate for the accepted AV design.
- Provides preconfigured or readily configurable AV service profiles.
- Supports IEEE 802.1X authentication.
- Supports secure SSH and HTTPS management with insecure management protocols disabled.
- Is rack-mountable and shall comply with applicable NDAA Section 889 requirements.
- Shall support the furnished 10 encoders, 15 decoders, cameras, microphones, three active loudspeakers, control endpoints, video-wall processor interfaces, and other assigned KIM AV endpoints within the accepted PoE and bandwidth design.
- Government-witnessed acceptance shall verify simultaneous PoE demand does not exceed 80 percent of the available switch budget under the accepted full-load condition.

3.6.3 Multi-Output UHD Video-Wall Controller (Datapath VSN V3 or Equal)

Quantity: 1

Make/Model Reference: Datapath VSN V3 or Equal

Required Salient Characteristics:

- Supports at least ten simultaneous source inputs, including HDMI and AV-over-IP-derived sources up to 4K60.
- Provides at least six independent UHD outputs at 3,840 x 2,160 at 60 Hz.
- Supports arbitrary window sizing, positioning, scaling, and cropping across the full LED canvas.
- Supports at least sixteen named/recallable display-layout presets with recall completing within two seconds.
- Supports pixel-pitch/canvas-geometry compensation and coordinated output mapping for the furnished 8 x 4 LED wall.
- Provides genlocked or otherwise frame-synchronized outputs suitable for seamless multi-output LED presentation.
- Provides redundant power supplies or equivalent power redundancy appropriate to the professional processing platform.
- Provides IP-based or documented API control enabling preset/layout recall from the furnished room-control system.
- Supports hot-swappable input modules or an equivalent maintainable modular input architecture.
- Includes all required chassis components, processing/output/input cards, storage, operating software, licenses, and accessories necessary for the accepted Kim Conference room configuration.
- Shall drive the primary and secondary LED walls as independently addressable canvases with combined output capacity sufficient to cover the full native resolution of both walls simultaneously.
- Supports arbitrary window sizing, scaling, cropping, and positioning across each LED canvas.
- Provides at least sixteen named layout presets with recall completing within two seconds.
- Supports LED pixel-pitch/canvas geometry compensation and precise mapping to the physical LED surfaces.
- Provides genlocked or otherwise frame-synchronized outputs suitable for stable dual-wall presentation.
- Provides redundant power supplies or equivalent power redundancy for the processor chassis.
- Provides an IP control API accepting preset/layout recall from the furnished room-control system.
- Provides hot-swappable input modules or equivalent serviceable modular input architecture.
- Provides sufficient composition capability to present multiple simultaneous sources independently across both walls without reducing either wall below its required native canvas geometry.
- Shall not require unauthorized cloud connectivity for normal operation.

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 Kim Conference Room integration.
- Wireless connectivity shall not be required for operation.

- Driver-free UVC and UAC class compliance on Windows without requiring vendor application software for normal capture operation.
- Accepts HDMI input up to 4K60.
- Provides capture at not less than 1080p60 in the accepted Government compute workflow.
- Provides HDMI loop-through output.
- Capture latency shall not exceed 80 ms at the accepted operating mode.
- Shall be assigned to one conferencing chain in accordance with the accepted KIM design and shall not create an inter-chain signal path.
- Shall integrate with the assigned Government-furnished PC/codec workflow and shall not require unauthorized wireless or cloud connectivity.

3.7 LED SUPPORT STRUCTURES, RACK, MUTE CONTROL, INSTALLATION CONSUMABLES, AND INCIDENTAL MATERIALS

3.7.1 Primary LED Wall Support Structure

Quantity: 1 lot

Required Salient Characteristics:

- Purpose-built structure independently supported from the building structure and designed for the complete primary LED wall load.
- Uses metal framing and backing board as required by the verified installation condition.
- Provides service access compatible with the installed depth and the furnished front-service LED architecture.
- Anchorage shall be designed for not less than three times the static load and include seismic restraint required by applicable installation criteria.
- Integrates signal and power containment and provides a finished appearance coordinated with the room.
- A sealed structural calculation and fabrication detail shall be submitted for Government approval before fabrication.
- Structure shall maintain LED cabinet alignment within the specified 0.2 mm maximum cabinet-to-cabinet step after final installation.

3.7.2 Secondary LED Wall Support Structure

Quantity: 1 lot

Required Salient Characteristics:

- Purpose-built structure independently supported from the building structure and designed for the complete secondary LED wall load.
- Uses metal framing and backing board as required by the verified installation condition.
- Provides service access compatible with the installed depth and the furnished front-service LED architecture.
- Anchorage shall be designed for not less than three times the static load and include seismic restraint required by applicable installation criteria.
- Integrates signal and power containment and provides a finished appearance coordinated with the room.
- A sealed structural calculation and fabrication detail shall be submitted for Government approval before fabrication.
- Structure shall maintain LED cabinet alignment within the specified 0.2 mm maximum cabinet-to-cabinet step after final installation.

3.7.3 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 with keyed-alike or Government-approved 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 room joinery/furnishings.
- Includes all shelves, blanking panels, mounting hardware, and internal power/cable-management accessories required for a complete installation.

3.7.4 Custom Wired Hardware Mute Control

Quantity: 1

Required Salient Characteristics:

- Purpose-fabricated control connected to a control-processor digital input through a wired low-voltage circuit with no dependency on AV-network availability.
- Provides latching operation with illuminated mute-state indication visible from the seating area.
- Actuation shall mute every furnished microphone input within 200 ms on both conferencing chains.
- Mute state shall be mirrored accurately on the furnished room-control touch panel.
- Operation shall remain functional when the room-control touch panel or its AV-network connection is unavailable.
- Includes an engraved Government-approved legend and enclosure finish coordinated with the room.
- Shall be mounted at a Government-designated position and integrated with the DSP/control architecture without creating an inter-chain signal path.

3.7.5 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 network links shall be certified as Category 6 or higher permanent links.
- 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.
- Provide low-voltage control cabling for the dedicated hardware mute control.
- LED signal and power cabling shall comply with the furnished LED manufacturer requirements and accepted redundant-path architecture.
- Provide galvanized conduit, cable tray, grommets, penetrations, and other containment required within the authorized low-voltage scope.
- Provide listed fire-stopping at rated penetrations 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 that identifies conferencing-chain assignment where applicable and is 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 primary and secondary LED walls and their support structures; three auxiliary 32-inch displays and furnished mounts; five Status Displays; one World Clock; seven P20 cameras; one I20 intelligent camera; microphones; loudspeakers; AV-over-IP endpoints; video-wall controller; capture interface; control equipment; DSP/audio equipment; both managed AV network switches; dedicated wired mute button; rack; 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 KIM room operation.
- 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 video-wall controller for source mapping, multi-window layouts, output mapping, LED-canvas geometry, and Government-approved recallable layout presets, and integrate preset recall with the room-control interface.
- Integrate all five Status Display displays and the World Clock with the furnished room-control touch-panel interface. The touch panel shall provide the user-operable controls required by Sections 3.3.5 and 3.3.6 while preserving manufacturer-supplied handheld-remote operation.

- 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 - Automated Multi-Camera Workflow

- Configure the furnished automated multi-camera processing system with the furnished PTZ and intelligent tracking cameras for active-speaker-based camera switching, participant framing, saved-preset-based camera tracking, and other Government-approved room scenarios.
 - Integrate and configure the automatic camera-tracking system so that both real-time intelligent tracking and preset-based tracking modes operate reliably within the approved workflow.
 - Coordinate the furnished manufacturer-authorized ancillary remote deployment and validation support and complete remote validation of camera tracking performance, microphone sensitivity, lip-sync, API/control integration, and all related system functions.
 - Camera workflows shall avoid excessive switching and shall provide stable, professional framing for VTC operations.

4.6 System Configuration - DSP, AEC, Audio, and Mute Control

- Configure DSP routing, AEC, gain structure, EQ, delay, dynamics, microphone processing, and output levels.
- Tune the active/passive ceiling speaker system for intelligible speech and balanced room coverage.
- Configure the dedicated wired mute button for reliable conferencing/microphone mute operation and synchronize its state with the room-control touch-panel mute indication/function.

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 primary LED wall provides at least 11,520 x 2,160 native resolution, at least 9,000 mm x 1,680 mm active area, 15 x 5 / 75-cabinet geometry, specified brightness/contrast/gray-scale performance, cabinet alignment, calibration retention, and redundant receiving-card/signal/power behavior.
- Verify the secondary LED wall provides at least 7,680 x 2,160 native resolution, at least 6,000 mm x 1,680 mm active area, 10 x 5 / 50-cabinet geometry, and the same required LED performance/redundancy characteristics as the primary wall.

- Verify inter-wall matching using the same test source so no perceptible difference in white point, brightness, or gamma is present at the design viewing condition.
- Verify both LED support structures against approved fabrication details/structural calculations and verify cabinet-to-cabinet step does not exceed 0.2 mm at every accessible joint.
- Verify the video-wall processor supports at least ten simultaneous inputs and six independent UHD outputs, independently addresses both LED canvases, provides correct geometry/mapping, and recalls all required named layouts within two seconds.
- Verify all three 32-inch displays receive their assigned signals, operate at 3,840 x 2,160, respond to accepted wired control, and are securely mounted using compatible wall mounts.
- Verify all five Status Displays provide commercial 4K presentation, applicable portrait/landscape operation, wired control, and Government-administered content/layout modification capability.
- Verify World Clock operation including at least six simultaneously configurable labeled time zones, authorized time synchronization, 24-hour, and automatic per-zone DST handling.
- Verify World Clock handheld-remote operation where furnished and control through the room-control touch panel; verify at least thirty preset time zones and creation/modification of at least one custom location without Contractor programming changes.
- Verify Status Display and World Clock configuration persists through a normal restart or is restored automatically from the accepted configuration.
- Verify intended source-to-destination AV-over-IP routing with correct scaling and end-to-end video latency not exceeding one frame under the accepted operating condition.
- Verify the wall-mounted touch panel provides the accepted KIM user interface and all required room-control functions, including dual-wall layouts, auxiliary/Status/World Clock display control, camera functions, conferencing-chain selection, audio, mute status, and startup/shutdown.
- Verify all eight cameras deliver stable video; verify PTZ presets recall within two seconds; verify the intelligent camera provides onboard tracking/framing; and verify the approved tracking-zone mapping.
- Verify automated camera switching follows the active speaker across all approved seating zones, returns to the default group/wide shot when no speaker is detected, and produces zero switches to a camera without the active speaker during a 15-minute scripted test.
- Verify the automated camera program output is available to both conferencing chains as designed without creating any audio, video, data, control, or network path between the two chains.
- Verify all five microphone channels and all twelve loudspeakers are addressable and operate without unacceptable hum, buzz, distortion, dropout, clipping, or feedback.
- Verify acoustic echo cancellation from every installed microphone position on both conferencing chains with no audible far-end echo attributable to the furnished system.
- Verify the dedicated wired hardware mute control mutes every microphone input within 200 ms on both chains, provides correct local illuminated state indication, mirrors state on the room touch panel, and remains functional when the touch-panel network path is disconnected.
- Verify conferencing-chain separation with both chains active simultaneously: no audio, video, data, or unintended control path assigned to one chain shall be present on the other, and no inter-VLAN route shall exist between chain VLANs.
- Verify managed AV network operation including approved VLAN/multicast/QoS/timing configuration, zero packet loss over a 60-minute full-stream soak, audio clock offset not exceeding 1 microsecond where measured/applicable, and simultaneous PoE demand not exceeding 80 percent of available budget.
- Verify the HDMI-to-USB capture interface on its assigned conferencing chain, including stable 1080p60 capture and capture latency not exceeding 80 ms.
- Verify 100 percent of installed Category 6 or higher network links pass permanent-link certification.
- Verify GFE integration for both PCs, both codecs, and the navigator, including correct conferencing-chain assignment and room-control state indication.

- Verify rack build, cable dressing, chain-identifying labels, grounding/bonding within Contractor scope, and overall workmanship.

5.2 Acceptance Deficiencies

Any failed or non-compliant 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 LED, display, mount, camera, automated-switching, network, audio, control, capture, mute-control, rack, and structural requirements.
- Line-by-line salient-characteristic compliance matrix for any proposed equal item.
- Pre-installation system design package including both LED wall elevations/geometry, structural calculations and support details, rack elevation, equipment layout, 32-inch/Status/World Clock locations, camera/microphone/loudspeaker locations, signal-flow diagram, AV/network logical diagram, two-chain separation architecture, cable schedule, endpoint/port assignments, IP/VLAN/multicast plan, control points, hardware-mute circuit, and GFE integration points.
- As-built drawings showing final equipment locations, both LED wall structures, display/mount locations, cable routing, rack configuration, camera/microphone/loudspeaker locations, and chain-specific assignments.
- Final native editable control programming files, compiled files, touch-panel project, AV-over-IP configuration backups, automated-camera configuration, intelligent/PTZ camera configurations, DSP configuration, managed-switch configuration, video-wall processor configuration/layouts, Status Display/World Clock configuration, and other device/system configuration files.
- Functional verification and acceptance record with pass/fail results, burn-in results, identified deficiencies, corrective actions, and retest results.
- Operator quick-reference guide, administrator guide, manufacturer warranty information, and Contractor warranty procedures.
- World Clock configuration record identifying the furnished minimum thirty preset time zones, at least six simultaneous displayed-zone configuration, location labels, UTC-offset/time-zone settings, and DST-rule configuration.
- Automated-camera configuration/validation report identifying all eight camera assignments, tracking zones, presets, switching rules, transition behavior, default shot, and manual-override behavior.
- Conferencing-chain separation record identifying assigned GFE, capture path, audio/video/control assignments, VLAN/network separation, and acceptance-test results for both chains.
- Hardware-mute configuration record identifying the physical control circuit, DSP/control logic, response time, local indication, touch-panel state mirroring, and fail-independent operation.
- 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.
- 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 KIM room operation, source selection, VTC operation, automated/manual camera behavior, content sharing, audio controls, primary and secondary LED operation, auxiliary-display use, dedicated mute-button operation, system startup/shutdown, basic troubleshooting, Status Display/World Clock handheld-remote and touch-panel operation, World Clock preset selection, and user-defined World Clock locations.
- As an incidental part of system turnover, provide one on-site administrator product familiarization session for designated Government personnel covering system startup/shutdown, configuration backups, restore procedures, system status checks, AV-over-IP/video-wall configuration awareness, automated-camera workflow awareness, mute-button/control integration, first-line troubleshooting, warranty/service procedures, World Clock time-zone preset administration, custom location configuration, DST/time-zone configuration, and configuration backup/restore.
- 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 KIM 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.
- 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.