

Section VI. Schedule of Requirements

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Schedule of Requirements

The delivery schedule expressed as weeks/months stipulates hereafter a delivery date which is the date of delivery to the project site.

Description	Quantity	Delivered, Weeks/Months
Audio and Video Systems for BCDA Clark Extension Office	1	Within 10 - 60 calendar days from receipt of Purchase Order. Project site: BCDA Clark Extension Office 9 th Flr. One West Bldg., West Aeropark Campus, Global Gateway Clark, Clark Freeport Zone, Pampanga

Bidder's Authorized Representative:

Signature over Printed Name

Principal Bidder / Supplier

***Section VII. Technical Specification
Compliance Form***

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TECHNICAL SPECIFICATION COMPLIANCE FORM

ITEM	SPECIFICATIONS	Compliance	
1	Audio and Video System for BCDA Clark Extension Office	Compliant	Non-Compliant
	<p><u>I. BOARDROOM</u></p> <p><u>1. Display:</u></p> <p>A. Main Display: (1 unit)</p> <ul style="list-style-type: none"> • Screen size: 86" Ultra HD Display • Interactive • Native Resolution: 3840 x 2160 (UHD) • Brightness (Module, cd/m²): 410 • Input: HDMI (3), DP, DVI-D, RGB, Audio in, USB 3.0, USB 2.0, OPS USB 2.0 • Output: Touch USB 2.0 (2) • Touch type: InGlass Technology • Multi touch point: Max 20 Point • Available object size for touch: more than Ø 3 mm, Accuracy: 2 mm • Vesa Standard Mount Interface: 600 x 400 mm • Protection Glass Thickness: 4T (Anti-Glare) • with Bracket <p>B. Wireless Presentation Technology: (1 unit)</p> <ul style="list-style-type: none"> • Mobile App OS Support: Apple iOS, Android Client • Software OS Support: Windows 7, Windows 8, Window 10, macOS (versions 10.10 through 10.13) • Client Software Video Frame Rate: 30 fps, audio supported • Full Screen Device Mirroring: Shares the screen image and audio from an Apple iOS, Android, macOS, or Windows device • Resolutions: 800x600@60Hz, 1024x768@60Hz, 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x1200@60Hz, 1920x1080@60Hz (1080p60), 1920x1200@60Hz • Bitrate Peak: 0.25 to 8.5 Mbps, variable depending on content complexity 		

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- Bitrate Average: 1.4 Mbps typical
- Audio Format: Stereo

2. Programmed Audio System:

A. Ceiling Loud Speakers: (6 units)

- In-Ceiling speaker with integral (blind mount) Back Can
- Baffle: Reflex loaded UL 94V-0 rated ABS
- Frequency Response (-3dB): 79Hz - 21kHz
- Frequency Range (-10dB): 60Hz - 24kHz
- System Sensitivity (1W @1m): 91dB (1W = 2.45V for 6 Ohms)
- Nominal Coverage Angle: 90 degrees conical
- Coverage Angle (1kHz to 6kHz): 93 degrees conical
- Power Handling: Average - 60W; Programmed - 120W; Peak – 240W
- Rated Maximum SPL: Average: 109dB, Peak: 115dB
- Nominal Impedance: 6 ohms

B. Power Amplifier: (1 unit)

- RMS Power: 240 W
- Signal / Noise: > 90 dB
- Protection: DC Short circuit, Overheating, Over load, Signal limiting
- Cooling: Dual speed controlled FAN
- Frequency: Response (± 3 dB): 70 Hz - 18 kHz
- Power: Supply: Conventional (Transformer)
- Power: Source: 230 ~ 240 V AC / 50 ~ 60 Hz (110~115 V AC / 50~60 Hz after connection change)
- Inputs: Sensitivity (1W/1m): -12 dB ~ 0 dB
- Inputs: Impedance: 10 k Ω balanced
- Inputs: Connector: XLR female with Male Link through
- Outputs: Voltage / Impedance: 100 V / 42 Ω , 70 V / 21 Ω , 31 V / 4 Ω
- Connector: 4-pin Euro Terminal block (Pitch - 5.08 mm with locking)

C. Mixing Console: (1 unit)

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- 12 Channel Mixing Console with DFX and Compressor
- Mono channels, Stereo channels
- With six balanced microphone inputs featuring high quality preamplifiers, a low-cut filter, an effective 3-band EQ with conveniently selected mids and switchable phantom power
- With RCA connectors for recording and playback devices and a Digital Effects Section with 100 presets
- With PFL (Pre-Fade Listen) function or Mute buttons
- Includes two effects loops, balanced XLR outputs, group and monitor outputs and a headphone jack
- With built-in compressor for an effective control of dynamics

D. Cardioid Boundary Microphone: (12 units)

- Transducer principle: pre-polarized condenser microphone
- Dimensions: 85 x 100 x 25 mm (WxDxH)
- Frequency response: 40 Hz – 20 kHz
- Pick-up pattern: Cardioid
- Nominal impedance: 200 Ω
- Phantom powering: P 24 - P 48
- Equivalent noise level: 29 dB (A)
- Equivalent noise level weighted as per CCIR 468-3: 39 dB (CCIR)
- Current consumption: 5.3 mA
- Output voltage Logic out: High level output voltage > 2.4 V, low level output voltage < 0.4 V
- Output voltage Logic in: High level input voltage > 2.0 V, Low level input voltage < 0.8 V
- Acoustics: boundary layer microphone
- Dynamic range: 111 dB (A)
- Sensitivity: 10 mV/Pa

E. Fixed Audio Digital Signal Processor (DSP): (1 unit)

- 128 x 128 channels of Audio Video Bridging (AVB)
- 12 mic/line level inputs with AEC, 8 mic/line level outputs
- Gigabit Ethernet port
- Up to 8 channels of configurable USB audio

- RS-232 serial port
- 4-pin GPIO
- 2-line OLED display with capacitive-touch navigation
- Rack mountable (1RU)
- System configuration and control via Ethernet
- Internal universal power supply
- Fully compatible with AVB servers, endpoints, expanders, and controllers
- Signal processing via intuitive software allows configuration and control for signal routing, mixing, equalization, filtering, delay, etc.
- CE marked, UL listed, and RoHS compliant

F. Input and Output Expanders: (1 unit)

- 4-Channels
- Frequency Response: (20Hz~20kHz @ +4dBu): +0/-0.25dB
- THD+N (20Hz~20kHz): @ 0dB Gain, +4dBu In: < 0.006%, @ 54dB Gain, -50dBu In: < 0.040%
- EIN (20Hz~20kHz, 66dB Gain, 150Ω): < -125dBu
- Dynamic Range (20Hz~20kHz, 0dB): > 108dB
- Input Impedance (balanced): 8kΩ
- Maximum Input: +24dBu
- Input Gain Range (6dB Steps): 0 - 66dB
- Power: 802.3at (PoE+) Class 4
- Phantom Power: +48 VDC (7mA/input)
- Cross Talk (channel to channel @ 1kHz): @ 0dB Gain, +4dBu In: < -85dB, @ 54dB Gain, -50dBu In: < -75dB
- Sampling Rate: 48kHz
- A/D - D/A Converters: 24-bit

G. AVB Ethernet Switch: (1 unit)

- Ports: 5X AVB
- Operational Bandwidth: 10/100/1 Gigabit
- Front Panel: 12x Activity LED
- Voltage: 8 to 18 VDC, tip positive
- Current: 0.5 A
- With Single-port injector (1 unit)

3. Control Systems Solution:

A. Control System Engine: (1 unit)

- Core 3 OS

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- Modular programming architecture
- 512MB RAM & 2GB Flash memory
- Expandable storage up to 1TB
- Rear panel MMC memory card slot
- High-speed USB 2.0 host port
- Front panel USB computer console port
- One RS-232/422/485 with hardware and software handshaking
- Two RS-232 ports with software handshaking only
- 8 IR/serial, 8 relay, and 8 Versiport I/O ports
- Backwards compatible to run existing SIMPL programs
- Full Unicode (multi-language) support
- Increased network throughput and security
- Powered via external power pack
- IIS v.6.0 Web Server
- IPV6 ready
- 1-space rack-mountable

B. Ceiling Mount Occupancy Sensor: (1 unit)

- Dual-technology
- Sensing
- Sensor Technology: Passive infrared and ultrasonic (40 kHz)
- Coverage Area: 2,000 sq. ft.
- Coverage Pattern: 360 degrees
- LED Indicators: IR: (1) Red LED, indicates PIR detection
Ultrasonic: (1) Green LED, indicates ultrasonic detection
- Connections: (1) 5-pin 3.5 mm detachable terminal block; 16 AWG maximum wire width supported, includes the following terminals: +24V: DC power input
- Power Requirements: Current Consumption: 45 mA at 24 Volts DC

C. 7" Touch Screen: (1 unit)

- TFT active matrix color LCD
- Aspect Ratio: 17:10 WSVGA
- Resolution: 1024 x 600 pixels
- Brightness: 350 nits (cd/m²)
- Contrast: 1100:01:00
- Color Depth: 24-bit, 16.7M colors

- Illumination: Edgelit LED w/auto-brightness control
- Viewing Angle: $\pm 80^\circ$ horizontal, $\pm 80^\circ$ vertical
- Touch Screen: Projected capacitive, 5-point multi-touch capable
- With Tabletop Enclosure

D. POE Switch: (1 unit)

- Number of Ports: 8 x 10/100/1000
- 802.3af
- Half/Full-duplex operation at 10/100Mbps
- Full-duplex operation at 1000Mbps
- Auto-Negotiation for each port
- Auto MDI/MDIX
- Switching Capacity: 16Gbps
- Max. Forwarding Rate: 11.9 Mpps
- MAC Address Table Size: 8K Entries
- Packet Buffer: 2Mbits
- Forwarding Mode: Store and Forward
- PoE Power Budget: 64W

E. Wireless Handheld Microphones: (2 units)

- True diversity half-rack receiver in a full-metal housing with intuitive LCD display for full control
- Easy and flexible wireless synchronization between transmitter and receiver via infrared
- Fast frequency allocation for up to 12 receivers via new linking functionality
- Up to 20 compatible channels
- Up to 42 MHz bandwidth with 1680 selectable frequencies, fully tunable in a stable UHF range
- Transmission Range: up to 100 meters / 300 feet
- High RF output power (up to 30 mW) depending on country regulations
- Frequency ranges:
A1: 470 - 516 MHz / A: 516 - 558 MHz / AS: 520 - 558 MHz
- Switching the bandwidth up to 42 MHz
- AF frequency of response: 80 - 18,000hz
- Signal to noise ratio: 110dba
- Dimensions: 50x265mm
- Weight: 450g

F. Wireless Lavalier Microphone: (2 units)

- Receiver & Transmitter

- RF characteristics Modulation Wideband FM
Frequency Ranges A1: 470 - 516 MHz A: 516 - 558 MHz AS: 520 - 558 MHz
- 20 frequency banks, each with up to 12 factory-preset channels, no intermodulation
- 1 frequency bank with up to 12 programmable channels Switching bandwidth up to 42 MHz
Nominal/peak deviation ± 24 kHz / ± 48 kHz Receiver Principle True Diversity Sensitivity (with HDX, peak deviation) $< 2.5 \mu\text{V}$ for 52 dBA eff S/N Adjacent channel selection Typically ≥ 65 dB Intermodulation Attenuation Typically ≥ 65 dB Blocking ≥ 70 dB
- Squelch low: 5 dB μV middle: 15 dB μV high: 25 dB μV
Pilot tone squelch can be switched off Antenna inputs 2 BNC sockets
- AF characteristics Compaander system EQ presets (switchable, act on line and monitor outputs) Preset 1: Flat Preset 2: Low Cut (-3 dB at 180 Hz) Preset 3: Low Cut/High Boost (-3 dB at 180 Hz, +6 dB at 10 kHz) Preset 4: High Boost (+6 dB at 10 kHz) Signal-to-noise ratio (1 mV, peak deviation) ≥ 110 dBA Total harmonic distortion (THD) $\leq 0.9\%$ AF output voltage (at peak deviation, 1 kHz AF) 6.3 mm jack socket (unbalanced): +12 dBu XLR socket (balanced): +18 dBu Setting range "AF Out" 48 dB (3 dB steps)
- Transducer principle pre-polarized condensor microphone Pick-up pattern cardioid Sensitivity (free field, no load) (1 kHz) 40 mV/Pa Max. SPL at 1 kHz 120 dB Frequency response 50 to 18,000 Hz Equivalent noise level A-weighted (DIN IEC 651) 31 dB Connector 3.5 mm jack Cable length approx. 1.60 m Supply voltage 7.5 V

4. Room Scheduling System

A. 7" Touch Screen: (1 unit)

- TFT active matrix color LCD
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- Contrast: 1100:01:00
- Color Depth: 24-bit, 16.7M colors
- Illumination: Edgelit LED w/auto-brightness control
- Viewing Angle: ±80° horizontal, ±80° vertical
- Touch Screen: Projected capacitive, 5-point multi-touch capable
- With Universal Mounting Bracket

B. Meeting Room Availability Sign: (1 unit)

- Acrylic, two sided
- Maximum Surface Thickness: 1-1/4 in (32 mm)
- Minimum Mounting Depth: 2-13/16 in (72 mm)

5. Video Conferencing System: (1 unit)

- Must be able to join from any video conferencing system platform,
- Hardware must be optimized to run on a cloud platform, for easy access to hosted conferences,
- Must be able to connect to any mobile devices,
- Must be able to connect to two or more participants (scalable),
- With software and technical support (includes firmware updates).

A. Technical Specifications:

- Hardware component: table microphone, wall mount for codec plus
- Bandwidth: up to 6 Mbps point to point
- Minimum bandwidth for resolution/frame rate: H.264
 - 720p30 from 768 kbps
 - 720p60 from 1152 kbps
 - 1080p30 from 1472 kbps
 - 1080p30 from 2560 kbps
- Firewall traversal: H.460.18, H.460.19 firewall traversal
- Video Inputs: One HDMI Input supports formats up to maximum 1080p60, two HDMI inputs support formats up to maximum 4K (3840 x 2160) at 30fps

	<ul style="list-style-type: none"> • Speakers (internal): High-quality speakers, Frequency response 70Hz to 20kHz, Max output level SPL 90db • Speaker tracking: 6-element microphone array for accurate speaker tracking • Wireless Sharing • Multipoint support: 4-way embedded SIP/H.323 conferencing capability with Multisite option • Multisite features: Adaptive SIP/H.323 Multisite <ul style="list-style-type: none"> 3-way resolution up to 1080p30 _ content up to 4Kp5 4-way resolution up to 720p30 _ content up to 4Kp5 • Full individual audio and video transcoding • H.323/SIP/VoIP in the same conference • Support for presentation (H.239/BFCP) from any participant at resolutions up to 3840 x 2160p5 • Embedded encryption: Automatic key generation and exchange • IP Network: <ul style="list-style-type: none"> DNS lookup for service configuration <ul style="list-style-type: none"> • Differentiated services (Quality of Service [QoS]) • IP-adaptive bandwidth management (including flow control) • Automatic gatekeeper discovery • Dynamic playout and lip-sync buffering • H.245 Dual-Tone Multi-frequency (DTMF) tones in H.323 • RFC 4733 DTMF tones in SIP • Date and time support using Network Time Protocol (NTP) • Media adaption and resilience • Uniform Resource Identifier (URI) dialing • Dynamic Host Configuration Protocol (DHCP) • 802.1X network authentication • 802.1Q Virtual LAN • IPv6 Network Support: <ul style="list-style-type: none"> Single call stack support for both H.323 and SIP <ul style="list-style-type: none"> • Dual-stack IPv4 and IPv6 for DHCP, SSH, HTTP, HTTPS, DNS, DiffServ 		
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- Support for both static and automatic IP configuration (stateless address auto configuration)
- Security Features:
 - Management using HTTPS and SSH
 - IP administration password
 - Menu administration password
 - Disable IP services
 - Network settings protection
- Network Interfaces Codec Medium:
 - One Ethernet (RJ-45) 10/100/1000 for LAN
 - One Ethernet (RJ-45) 10/100/1000 for direct pairing with camera
 - One Ethernet (RJ-45) 10/100/1000 with Power over Ethernet (PoE) for direct pairing with Touch 10
 - Wi-Fi 802.11a/b/g/n/ac 2.4 GHz/5 GHz for LAN. 2x2 MIMO
 - Bluetooth 4.0 LE
- Other interface: USB 2.0 port, uUSB, factory reset pinhole
- Power supplies: 100 to 240 VAC, 50/60 Hz, 12V DC input
- Camera Overview:
 - 5K Ultra HD Camera
 - Support up to 60 fps
 - 15.1 MP image sensor
 - 1/1.7 CMOS
 - 5x digital zoom (3 tele-lenses each with 50-degree horizontal field of view)
 - f/2.0 aperture
 - Auto focus, brightness and white balance
 - Focus distance 1m infinity

B. Features:

- Includes a cloud-based phone system, with the ability to connect other call control capabilities and services, and encompasses all the devices to make calls,
- Secure, all-in-one team collaboration. Move work forward in secure work spaces where everyone can contribute anytime with messaging, file sharing, white boarding, video meetings, calling.
- with File storage

- Integrate existing IT assets to provide a single, integrated experience.

6. Display: (2 units) - will be installed on both sides of main display

- Screen size: 49" FHD Display
- Resolution: 1920 x 1080 Pixels
- Brightness: 350
- Input: HDMI (2), DVI-D, RGB, Audio
- Output: Audio
- External Control: RS232C in/out. RJ45, IR Receiver, USB
- Power Supply: 100-240V~, 50/60Hz
- Power Consumption: 65W, Energy Saving: 50W
- Compatible with VESA-wall mounting system: 300 x 300
- with Bracket (either Ceiling Mount or Wall mounted)

7. Connectivity: Table-Mount Modular: (2 units)

- Must have Flip top, Table Mount Multi-Connection Solution:
 - Black Anodized
 - Connectors – Bottom Panel
 - Temperature: 32° to 112° F (0° to 45° C)
 - Humidity: 10% to 90% RH (non-condensing)
 - Chassis: Metal, black
 - Cover: Aluminum, black anodized or brushed aluminum finish
 - Mounting: Flush tabletop mount, 1-3/4 in (44 mm) maximum surface thickness, 6-1/4 in (159 mm) deep x 7-1/2 in (190 mm) wide cutout (template provided)
 - Width: 7.98 in (203 mm); / 9.19 in (234 mm) with mounting brackets
 - Depth: 6.77 in (172 mm); / 7.88 in (200 mm) with lid open
 - Weight: 5.7 lbs. (2.6 kg)
 - With Flip Top Power Outlet Module (2 units)
 - With Cable Retractable for CAT5e (2 units)
 - With Cable Retractable for HDMI (2 units)
 - With Cable Retractable for USB (2 units)

8. Platform Document Visualizer: (1 unit)

- Pixel Count: 5 megapixels
- Sensor: 1/3.2" CMOS
- Shooting Area: Max. 15.74" x 11.81"