### Terms of Reference

### For the delivery of ICT Equipment Procurement for ECMT/AIS and Office Productivity

1. For all I.T. equipment:
* Bidder must be an authorized reseller/authorized dealer of the brand being offered for a period of at least five (5) years. A current valid manufacturer’s certification authorizing the bidder to participate in this project is required as part of the technical component on bid proposal.
* Bidder must for the duration of the warranty period provide a; 1) 24 x 7 technical support via phone and e-mail; 2) 8 x 5 onsite technical support; 3) One (1) hour phone response time upon receipt of call and; 4) Next Business Day (NBD) onsite visit. A valid certificate is required for this as part of the technical component on bid proposal.
* Bidders must not exceed to ninety (90) day delivery lead-time upon receipt of Notice to Proceed.
* Bidder must provide a standard/universal adaptor/converter for a 3-pin (UK) or round power plug.
* Bidder must provide a standard 2.0 USB cable for printer/scanner and HDMI cable for projectors.
* Bidder must provide customer satisfaction certificate from previous company/agencies.
* Bidder must have at least two (2) certified technicians for technical service for the repairs of IT equipment. An additional valid or equivalent certificate is required as part of the technical component of its bid proposal.
1. For laptop computers:
* Bidder must be an Authorized Service Partner (ASP) of the brand being offered and a current valid certificate is required as part of the technical component on bid proposal.
* Bidder must have at least two (2) manufacturer certified engineers for the brand of laptop and desktop computers, including workstations being offered.
* The brand which represents the bidder must apply in the latest top 3 of the Leaders Group of Gartner’s List for Global Enterprise Notebook and Desktop. Certification in the inclusion in the Top 3 should is required from the brand’s manufacturer.
* Bidder should immediately replace storage media once failure is detected within warranty period.
* Bidder must configure the storage media partitions as:

|  |  |  |
| --- | --- | --- |
| **Logical Drive Letter**  | **Volume Name/Label** | **Disk Space Distribution** |
| C: | System | 50% of Total Capacity |
| D: | Data | 50% of Total Capacity |

* Bidder must provide copies of Recovery Discs in a CD or thumbdrive.
* Bidder must provide a three-year warranty on parts and services.
* Bidder should replace a factory defective unit with a new unit within 30 days upon delivery of the item.
* In case of outside repair within the 3-year warranty period, the winning bidder shall provide a service unit to the OSG.
* Repairs shall be made on-site for the duration of the warranty period, in case the repair cannot be completed on the day of on-site repair, the Winning Bidder shall provide the OSG with a service unit in the next working day.

If repair of the unit is refused by the Winning Bidder during the warranty period on account of damage not being covered by the warranty, the Winning Bidder shall submit a report detailing its refusal not more than fifteen days from the communication of its refusal.

**ICT Equipment Technical Specifications:**

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| **LOT 1 : ECMT and AIS Equipment** |
| **ITEM** | **QTY** | **UNIT COST** | **TOTAL** |
| Biometric Scanner | 2 Units | 88,000.00 | **176,000.00** |
| High Res Scanner (75ppm) | 3 Units | 350,000.00 | **1,050,000.00** |
| Barcode Printer | 11 Units | 18,000.00 | **198,000.00** |
| Wireless Barcode Scanner | 2 Units | 40,500.00 | **81,000.00** |
| QR Code Scanner | 9 Units | 12,000.00 | **108,000.00** |
| **SUB TOTAL** | **₱ 1,613,000.00** |
| **LOT 2 : Office Productivity** |
| **ITEM** | **QTY** | **UNIT COST** | **TOTAL** |
| Business Class Laptop | 85 Units | 45,000.00 | **3,825,000.00** |
| Multimedia Projector With Mounting Kit | 32 Units | 40,000.00 | **1,280,000.00** |
| Network Attached Storage for Backup and Replication | 1 Unit | 150,000.00 | **150,000.00** |
| SAN Switch with HDD Upgrade | 1 Lot | 1,005,000.00 | **1,005,000.00** |
| Teleconferencing Equipment | 1 Unit | 50,000.00 | **50,000.00** |
| Video Conferencing Equipment | 1 Unit | 800,000.00 | **800,000.00** |
| File Storage For Division | 25 Units | 36,000.00 | **900,000.00** |
| Interactive Monitor | 1 Unit | 100,000.00 | **100,000.00** |
| Managed Network Switch (PoE) | 24 Units | 16,000.00 | **384,000.00** |
| VOIP Phone With Adaptor | 40 Units | 8,000.00 | **320,000.00** |
| **SUB TOTAL** | **₱ 8,814,000.00** |

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| **LOT 1 : ECMT and AIS Equipment** |  |
| **ICT EQUIPMENT** | **QTY** | **UNIT COST** | **TOTAL** | **COMPLY** |
| **BIOMETRIC SCANNER** | **2 Units** | 88,000.00 | **176,000.00** |  |
| **Face Detection and Identification** | Auto tilt camera |  |
| Fake face detection |  |
| **Specification** |   |  |
| **CPU** | 1Ghz Quad Core (Dual) |  |
| **Memory** | 4GB NAND + 8GB MicroSD |  |
| **Users** | 250,000 |  |
| **Face** | 10,000 (1;1)/2,000 (1;N)  |  |
| **Fingerprint** | 250,000 (1:1)/25,000 (1:N)  |  |
| **Log Capacity**  | 10,000,000 |  |
| **Image Logs**  | 20,000 |  |
| **Operation Mode** |  Face, Fingerprint , Card & PIN  |  |
| **Communications** | TCP/IP, RS-485,RS232, Wiegand In & Out |  |
| **LCD Display**  |  5.0” touchpad LCD (480\*800)  |  |
| Electrostatic capacitive touch screen |  |
| **Camera** | Tilt Dual Camera (Color & IR)  |  |
| **FRR /FAR** | 0.1% / 0.0001%  |  |
| **Power** | 12-24VDC |  |
| **Dual Card Reader** | RF & Mifare |  |
| **Dimension** | 149.5 x 208.5 x 46  |  |
| **Certificates**   | KC, CE, FCC, RoHS |  |
| Android OS Familiar UI such as Smart Phone Apps  |  |
| Fake finger detection  |  |
| **Warranty** | One year on parts and labor |  |
| **ICT EQUIPMENT** | **QTY** | **UNIT COST** | **TOTAL** | **COMPLY** |
| **HIGH RES SCANNER** (75ppm) | **3 Units** | 350,000.00 | **1,050,000.00** |  |
| **Type** | Must be Desktop sheet-fed scanner |  |
| **Document Feeding** | Must be Automatic or manual sheet feeding |  |
| **Document size** |  |
| **Width** | Must be 50.8 - 305mm |  |
| **Length** | Must be 70 - 432mm |  |
| **Long Document Mode:**  | Must be up to 3,000mm |  |
| **Document thickness and weight** |   |  |
| **Continuous Feeding** | Must be 20 - 209g/m2, 0.04 - 0.25mm |  |
| **Non-Separation Mode** | Must be 20 - 255 g/m2, 0.04 - 0.3mm |  |
| **Feeding Capacity**  | Must be 48mm stack or 500 sheets of 80 g/m2 |  |
| **Scanning Element** | Must be 3-line CMOS CIS |  |
| **Light Source** | Must be LED (red, green, and blue) |  |
| **Scanning Side**  | Must be Simplex / Duplex |  |
| **Scanning Modes** | Black and White, Error Diffusion, Advanced Text Enhancement, Advanced Text Enhancement II, 256-level Grayscale, 24-bit Color, Auto Colour Detection |  |
| **Scanning Resolutions**  | 150 x 150dpi, 200 x 200dpi, 240 x 240dpi, 300 x 300dpi, |  |
|  | 400 x 400dpi, 600 x 600dpi |  |
| **Scanning speed\*1 (A4 / LTR, 200dpi)** |   |  |
| **B&W** | **Portrait:** DR-G1100: 75ppm (Simplex) / 150ipm (Duplex) Landscape |  |
| **Landscape:** DR-G1100: 100ppm (Simplex) / 200ipm (Duplex) |  |
| **Grayscale** | **Portrait:** DR-G1100: 75ppm (Simplex) / 150ipm (Duplex) |  |
| **Landscape:** DR-G1100: 100ppm (Simplex) / 200ipm (Duplex) |  |
| **Colour** | **Portrait:** DR-G1100: 75ppm (Simplex) / 150ipm (Duplex) |  |
| **Landscape:** DR-G1100: 100ppm (Simplex) / 200ipm (Duplex) |  |
| **Interface** | Hi-Speed USB 2.0 |  |
| **Technical Specification** |  |
| **Scanner driver** | ISIS / TWAIN |  |
| **Useful functions** | Job Function, Ultrasonic Double-Feed Detection, Staple Detection, Text Enhancement, Dropout and Color Enhancement, Auto Page Size Detection, 3-D Color Correction, Image Rotation, Skip Blank Page, Edge Emphasis, Moiré Removal, Prevent Bleed Through / Remove Background, Contrast Adjustment, Shading Correction, Brightness Adjustment, Deskew, Border Removal, Scanning Side Selection, Scan Area Settings, Add-on Settings, Text Orientation Recognition, Punch Hole Removal, Folio Scan, Unnecessary dots removal, Notch removal, Background Smoothing, Character Emphasis, Count Only Mode, Verify Scan, Rapid Recovery System, MultiStream™ |  |
| **Power requirements** | AC220-240V (50 / 60Hz) |  |
| **Power Consumption** | **220 - 240V:** 94.3W (Scanning), 1.7W (Sleep mode) |  |
| **Operating Environment** | 10 - 32.5°C |  |
|  | **Humidity:** 20 - 80% RH |  |
| **Dimensions**  | **Feed trays closed:** 480 x 535 x 315mm |  |
| **(W x D x H)** |
| **Weight** | Approx. 22.8kg |  |
| **Warranty** | One year on parts and labor |  |
| **ICT EQUIPMENT** | **QTY** | **UNIT COST** | **TOTAL** | **COMPLY** |
| **BARCODE PRINTER (Desktop Barcode Printer)** | **11 Units** | 18,000.00 | **198,000.00** |  |
| **Standard Features:** | Must be 32 bit RISC processor |  |
| Must have Co-resident EPL and ZPL programming languages (emulator is not allowed) |  |
| Must have Triple connectivity: Serial, USB and parallel |  |
| Print methods: Thermal transfer and direct thermal modes |  |
| ›› GC420t — thermal transfer and direct thermal |  |
| \* Construction: Dual-wall frame, reinforced plastic |  |
| \* OpenACCESS™ for easy media and ribbon loading |  |
| \* Certified Microsoft ® Windows ® drivers |  |
| **Resolution** | 203 dpi/ 8 dots per mm |  |
| **Memory** | 8 MB Flash, 8 MB SDRAM (standard) |  |
| **Print Width** | 4.09”/104 mm |  |
| **Maximum Print Length** | 39”/990 mm |  |
| **Maximum Print Speed** | 4”/102 mm per second |  |
| **Media Sensors** | Standard: Fixed reflective and transmissive sensors |  |
| **Media width** | 1.00”/25.4 mm to 4.24”/108 mm |  |
| **Media length** | 0.38”/9.6 mm to 39”/990 mm |  |
| **Maximum media roll size** | 5”/127 mm O.D. on a 1.00”/25.4 mm, 1.5”/38 mm I.D. core |  |
| **Media thickness** | 0.003”/0.08 mm to 0.007”/0.18 mm |  |
| **Media types** | Roll-fed or fan-fed, die cut or continuous direct thermal labels with or without black mark, tag stock, continuous receipt paper, wristbands, and optional liner-free direct thermal media |  |
| **Ribbon Characteristics:** |   |  |
| **Outside diameter** | 1.34”/34 mm |  |
| **Standard length** | 244’ (74 m) |  |
| **Ratio** | 1:1 media to roll to ribbon |  |
| **Width** | 1.33”/33.8 mm to 4.3”/110 mm |  |
| **Core I.D.** | 0.5”/12.7 mm |  |
| **Firmware:** | \* The printer must have Powerful programming language that lets printers run stand-alone applications, connect to peripherals, and much more (option) |  |
| \* The printer must have Programming utility that makes it dramatically easier for programmers to create and test complex ZBI 2.0 programs and distribute them to the printer  |  |
| \* The printer must have Programming Language that provides sophisticated label formatting and printer control and is compatible with tabletop and mobile printers |  |
| \* The printer must have Eltron Programming Language that simplifies label formatting and enables format compatibility with legacy applications |  |
| Line Mode support (GK888d) enables format compatibility with legacy applications |  |
| **Fonts/Graphics/Symbologies:** | • 16 resident expandable ZPL fonts |  |
| • One resident scalable ZPL font |  |
| • 5 resident expandable EPL2 fonts |  |
| • Supports user-defined fonts and graphics — including custom logos |  |
| **Bar Code Symbologies:** | • Bar Code Ratios: 2:1 (non-rotated) and 3:1 |  |
| **Standard Features:** | Must be 32 bit RISC processor |  |
| Must have Co-resident EPL and ZPL programming languages (emulator is not allowed) |  |
| Must have Triple connectivity: Serial, USB and parallel |  |
| Print methods: Thermal transfer and direct thermal modes |  |
| ›› GC420t — thermal transfer and direct thermal |  |
| \* Construction: Dual-wall frame, reinforced plastic |  |
| \* OpenACCESS™ for easy media and ribbon loading |  |
| \* Certified Microsoft ® Windows ® drivers |  |
| **Resolution** | 203 dpi/ 8 dots per mm |  |
| **Memory** | 8 MB Flash, 8 MB SDRAM (standard) |  |
| **Print Width** | 4.09”/104 mm |  |
| **Maximum Print Length** | 39”/990 mm |  |
| **Maximum Print Speed** | 4”/102 mm per second |  |
| **Media Sensors** | Standard: Fixed reflective and transmissive sensors |  |
| **Media width** | 1.00”/25.4 mm to 4.24”/108 mm |  |
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| **Maximum media roll size** | 5”/127 mm O.D. on a 1.00”/25.4 mm, 1.5”/38 mm I.D. core |  |
| **Media thickness** | 0.003”/0.08 mm to 0.007”/0.18 mm |  |
| **Media types** | Roll-fed or fan-fed, die cut or continuous direct thermal labels with or without black mark, tag stock, continuous receipt paper, wristbands, and optional liner-free direct thermal media |  |
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| **Outside diameter** | 1.34”/34 mm |  |
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| **Ratio** | 1:1 media to roll to ribbon |  |
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| **Core I.D.** | 0.5”/12.7 mm |  |
| **Firmware:** | \* The printer must have Powerful programming language that lets printers run stand-alone applications, connect to peripherals, and much more (option) |  |
| \* The printer must have Programming utility that makes it dramatically easier for programmers to create and test complex ZBI 2.0 programs and distribute them to the printer  |  |
| \* The printer must have Programming Language that provides sophisticated label formatting and printer control and is compatible with tabletop and mobile printers |  |
| \* The printer must have Eltron Programming Language that simplifies label formatting and enables format compatibility with legacy applications |  |
| Line Mode support (GK888d) enables format compatibility with legacy applications |  |
| **Fonts/Graphics/Symbologies:** | • 16 resident expandable ZPL fonts |  |
| • One resident scalable ZPL font |  |
| • 5 resident expandable EPL2 fonts |  |
| • Supports user-defined fonts and graphics — including custom logos |  |
| **Bar Code Symbologies:** | • Bar Code Ratios: 2:1 (non-rotated) and 3:1 |  |
| **Warranty** | One year on parts and labor |  |
| **ICT EQUIPMENT** | **QTY** | **UNIT COST** | **TOTAL** | **COMPLY** |
| **WIRELESS BARCODE SCANNER** | **2 Units** | 40,500.00 | **81,000.00** |  |
| **Technology** | Must be 802.11b/g/n  |  |
| Must be rugged design |  |
| **Features** | Must have flexible data capture options, a 1-D linear imager, a 1-D laser or a 1-D/2-D area imager, and all three scan engines must capture damaged, dirty and scuffed bar codes on the first scan |  |
| Must enterprise-grade push-to-talk (PTT), plus centralized management features |  |
| **Development Tools** | Must have RhoElements application development platform that allows you to create cross-platform applications that work on different mobile computers with different operating systems |  |
| **Keypad** | Must have 27-key numeric; 2 programmable side buttons  |  |
| Must support keypad overlays for localisation and custom functions  |  |
| Must support HTML5 |  |
| **Management tools** | Must have Mobile Device Management (MDM) solutions that allows you to remotely stage, update, monitor and troubleshoot your devices |  |
| **Display** | Must be 2.8 inches QVGA with backlight; TFT-LCD,64K colours  |  |
| **Touchpanel** | Must be Resistive touch panel  |  |
| **Expansion Slot** | Must have User accessible Micro SDHC card slot (up to 32GB)  |  |
| **Connectivity** | Must have Bluetooth; USB 1.1 full speed host/client  |  |
| **Notification** | Must have LED and audible alert |  |
| **CPU** | Marvell PXA 320 624 MHz |  |
| **Operating System** | Microsoft Embedded CE 6.0 Core & Pro (MC2180 Only) Editions  |  |
| **Memory** | 128 MB RAM/256 MB ROM |  |
| **Battery** | 2400 mAh rechargeable Smart Li-Ion; user replaceable |  |
| **Exit Window** | Corning Gorilla Glass |  |
| **WLAN Security** | WEP, WPA, WPA2, 802.1x, EAP-TLS,TTLS (CHAP, MS-CHAP , MS-CHAPv2, PAP or MD5), PEAP (TLS, MSCHAPv2, EAP-GTC), LEAP, EAP-FAST ( TLS, MS-CHAPv2, EAP-GTC), CCXv4 certified  |  |
| **WPAN** | Bluetooth Class II, v 2.0 with EDR; integrated antenna |  |
| **Accessories** | Must include handstrap, active sync cable, and power supply |  |
|  | Must include US AC line cord, 7.5 feet long, grounded, three wire for power supplies  |  |
| **Warranty** | One year on parts and labor |  |
| **ICT EQUIPMENT** | **QTY** | **UNIT COST** | **TOTAL** | **COMPLY** |
| **QR CODE SCANNER** | **9 Units** | 12,000.00 | **108,000.00** |  |
| **Technology** | Handheld 2D Barcode Scanners |  |
|  | Must Scans 1-D, 2-D and PDF417 bar codes on paper, mobile phones and computer displays |  |
|  | Must have Omni-directional scan pattern |  |
|  | Must support all common interfaces |  |
|  | Must provide reliable operation despite spills and drops |  |
|  | Must be compatible with 123Scan and Remote Scanner Management (RSM) |  |
|  | Must be capable of PDF417, MicroPDF417, Composite Codes, TLC-39, Data Matrix, Maxicode, QR Code, MicroQR, Aztec |  |
|  | Must have Motion Tolerances of Up to 25 in. / 63.5 cm per second |  |
|  | Must support the following protocols over USB:  HID Keyboard (default mode), SNAPI, COM Port Emulation, IBM SurePOS ( Yellowstone) (IBM Handheld,IBM Tabletop, OPOS); |  |
|  | Must support the following protocols over RS232: Wincor Nixdorf, ICL, Fujitsu, Olivetti, Keyboard Wedge and RS485 IBM46xx ; |  |
|  | The minimum resolution must be SR: Code 39 4 mil; UPC 60% 5 mil; PDF417 5 mil, Datamatrix 7.5 mil |  |
| **Dimensions** | 6.7 in. H x 3.7 in. L x 2.7 in. W (17 cm H x 9.3 cm L x 6.8 cm W) |  |
| **Warranty** | One year on parts and labor |  |

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| **LOT 2 : Office Productivity** |  |
| **ICT EQUIPMENT** | **QTY** | **UNIT COST** | **TOTAL** |  |
| **BUSINESS CLASS LAPTOP** | **85 Units** | 45,000.00 | **3,825,000.00** |  |
| **Product Classification** | True Branded Notebook PC |  |
| **Certification** | Must belong in the top 3 of the Leaders Group of Gartner’s Magic Quadrant for Global Enterprise Notebook and Desktop |  |
|  | EPEAT ™ Gold; ENERGY STAR® 6.1; GREENGUARD®; RoHS-compliant |  |
|  | MIL-STD-810G military certification |  |
| **Microprocessor** | Intel Core i5-6200U Processor 6th Generation up to 2.8Ghz or better |  |
| **Cache** | 3MB Cache  |  |
| **Chipset** | Intel SoC (System on Chip) platform |  |
| **Memory** | 4 GB PC3-12800 1600MHz DDR3L |  |
| **Hard Disk** | 500GB 7200rpm |  |
| **Display** | 14" Wide LED High Definition (1366 x 768)  |  |
| **Graphics** | Intel HD Graphics |  |
| **Connectivity** | Integrated 10/100/1000 MBps Lan Controller; Wireless b/g/n (2x2 GN) and Bluetooth 4.0 |  |
| **Media Reader** | 4-in-1 reader (MMC, SD, SDHC, SDXC) |  |
| **Ports**  | Three USB 3.0 (one Always On), VGA, Mini DisplayPort, Ethernet (RJ-45) |  |
| **Audio support**  | HD Audio, Realtek ALC3232 codec |  |
| **Keyboard** | 6-row, spill-resistant, multimedia Fn keys |  |
| **UltraNav** | TrackPoint pointing device and buttonless Mylar surface touchpad, multi-touch |  |
| **Security** | Power-on password, hard disk password, supervisor password, security keyhole |  |
| **Security chip** | Trusted Platform Module, TCG 1.2-compliant |  |
| **Multimedia Options** | Integrated Stereo Speakers, HD Video, 720p Web camera w/ MIC Microphone: Dual-array with VOIP enhancement |  |
| **Operating System** | Genuine Windows 10 Professional Preinstalled |  |
| **Battery** | 6 cell LiPolymer 23.2Wh Rear |  |
| **Adapter** | 45W Adapter |  |
| **Carrying Case** | Standard Carrying Case |  |
| **Weight** | Starting at 1.92kg  |  |
| **Features** | Ability to remotely delete data. Must be able to set policies to ensure offline devices are automatically protected |  |
|  | Delivers improved thermal and power efficiency, up to 30 day standby, faster resume time, enhanced security, as well as anti-tampering measures |  |
| **Included** | Kengsington Lock and Optical Mouse |  |
| **Warranty** | 3/3/3 Years Warranty (parts/labor/onsite) |  |
| **ICT EQUIPMENT** | **QTY** | **UNIT COST** | **TOTAL** |  |
| **MULTIMEDIA PROJECTOR WITH MOUNTING KIT** | **32 Units** | 45,000.00 | **3,825,000.00** |  |
| **Features** | Must have ColorBoost3D & ColorSafe II Features |  |
| **Resolution** | Native XGA (1,024 x 768) |  |
|  | Maximum WUXGA (1,920 x 1,200) |  |
| **Aspect Ratio** | 4:3 (Native), 16:9 (Supported) |  |
| **Contrast Ratio** | Dynamic Black 20,000:1 |  |
| **Displayable Colors** | 1.07 Billion Colors |  |
| **Brightness** | 3,600 ANSI Lumens (Standard), |  |
|  | 2,880 ANSI Lumens (ECO), |  |
|  | (Compliant with ISO 21118 standard) |  |
| **Projection Screen Size (Diagonal)** | 27" ~ 300" (69cm ~ 762cm) |  |
| **Projection Distance** | 1.2m ~ 11.8m (3.9' ~ 38.8') |  |
| **Throw ratio**  | 1.94 ~ 2.16 (51"@2m)  |  |
| **Projection lens**  | F = 2.41 ~ 2.53, f = 21.85mm ~ 24.01mm, Manual Zoom & Focus  |  |
| **Lamp Type** | Osram 195W |  |
| **Lamp Life** | 5,000 Hours (Standard), |  |
|  | 6,000 Hours (ECO), |  |
|  | 10,000 Hours (ExtremeEco)\* |  |
|  | Lamp Life of ExtremeEco mode is based on an industrial standard of educational usage cycle, which consists of 45 minutes of Full, ECO and/or Dynamic modes, 75 minutes of ExtremeEco (lowest lamp power) mode and 15 minutes of Power Off mode |  |
| **Ceiling Mounting Capability** | Yes |  |
| **Audio** | 3W Speaker x 1 |  |
| **Keystone correction**  | + / - 40° (Vertical, Manual)  |  |
| **Weight** | 2.5 Kg (5.5 lbs) |  |
| **Dimensions** | 314 x 223 x 93 mm |  |
|  | (12.4" x 8.8" x 3.7") |  |
| **Remote Control** | IR remote control, |  |
|  | PgUp/PgDn functions |  |
| **Power Supply** | AC input 100~240V, |  |
|  | 50/60 Hz |  |
| **Power Consumption** | 235 Watts (Standard), |  |
|  | 195 Watts (ECO), |  |
|  | <0.5 Watts (Standby) |  |
| **Noise Level** | 31 dBA (Standard), |  |
|  | 28 dBA (ECO) |  |
| **Input Interface** | Analog RGB/Component Video (D-sub) x 1 |  |
|  | HDMI (Video, Audio, HDCP) x 1 |  |
|  | PC Audio (Stereo mini jack) x 1 |  |
| **Control interface**  | USB (Mini-B) x 1  |  |
| **Mounting Kit** | Universal Projector Ceiling mount bracket |  |
| **Accessories** | 10 Meter VGA Cable and HDMI cable |  |
| **Warranty** | One year on parts and labor on site |  |
| **ICT EQUIPMENT** | **QTY** | **UNIT COST** | **TOTAL** |  |
| **NETWORK ATTACHED STORAGE for BACKUP AND REPLICATION** | **1 Unit** | 150,000.00 | **150,000.00** |  |
| **HARDWARE** |  |  |
| **CPU** | Intel Atom C2538 Quad Core 2.4GHz |  |
| **Hardware Encryption Engine** | Yes (AES-NI) |  |
| **Floating Point**  | Yes |  |
| **RAM Size**  | DDR3 2 GB (Expandable up to 6 GB) |  |
| **Internal HDD/SSD** | 8 x 3TB 3.5” SATA 7200rpm |  |
| **Max Internal Capacity** | 48 TB (6 TB HDD X 8) |  |
| **Hot Swappable HDD**  | Yes |  |
| **External Ports** | USB 3.0 ports X 4, eSATA X 2 |  |
| **Size (HxWxD)**  | 157 x 340 x 233 mm |  |
| **Weight**  | 5.29 kg |  |
| **LAN**  | Gigabit X 4 |  |
| **Wake on LAN/WAN** | Yes |  |
| **Wireless Support**  | Yes |  |
| **Power Frequency** | 50 Hz to 60 Hz, Single Phase |  |
| **GENERAL** |  |  |
| **Networking Protocols**  | CIFS, AFP, NFS, FTP, WebDAV, CalDAV, iSCSI, Telnet, SSH, SNMP, VPN (PPTP, OpenVPN™, L2TP) |  |
| **File System** | Internal: EXT4 |  |
| External: EXT4, EXT3, FAT, NTFS, HFS+ |  |
| **Storage Management** | Max File System Size: 108 TB, Max Internal Volume #: 512, Max iSCSI Target #: 32, Max iSCSI LUN#: 256; |  |
| Raid Clone/Snapshot support; Supported RAID Type: Synology Hybrid RAID, Basic, JBOD, RAID 0, RAID 1, RAID 5, RAID 6, RAID 10; Synology Expansion Unit Support : DX513, DX213 |  |
| **File Sharing Capability** | Max User Account: 2048, Max Group: 256, Max Shared Folder: 512, Max Concurrent CIFS/AFP/FTP Connections: 512 |  |
| **Privilege** | Windows Access Control List (ACL) |  |
| **Directory Service** | Windows AD Integration: Domain Users login via Samba (CIFS)/AFP/FTP/File Station, LDAP Integration |  |
| **Virtualization** | VMware vSphere 5, Microsoft Hyper-V, Citrix Ready |  |
| **Security** | FTP over SSL/TLS, IP Auto-Block, Firewall, Encrypted Network Backup over Rsync, HTTPS Connection |  |
| **Supported Clients** | Windows XP onward, Mac OS X 10.5 onward, Ubuntu 9.04 onward |  |
| **Supported Browsers** | Chrome ® , Firefox ® Internet Explorer ® : 8 or onward, Safari ® 5 or onward, Safari (iOS 5 or later on iPad ® ), Chrome (Android™ 4.0 on tablets) |  |
| **APPLICATIONS** |   |  |
| **File Station** | Virtual Drive, Remote Folder |  |
| **Backup Solutions** | Network Backup, Local Backup, Desktop Backup, Shared Folder Sync - Max Task Number: 8, |  |
|  | Configuration Backup |  |
| **Mail Server**  | Supported Mail Server Protocols: POP3, SMTP, IMAP |  |
| **FTP Server**  | Bandwidth Control, Custom FTP Passive Port Range, Anonymous FTP, Transfer Log |  |
| **Web Station** | Virtual Host (up to 30 websites), PHP/MySQL ® , 3rd-Party Applications Support |  |
| **Printer Server** | Max Printer #: 2, Printing Protocols: LPR, CIFS, IPP, Apple iOS Printing, Google Cloud Print™, Multi-Functional Print Server (MFP functions are for Windows PC only) |  |
| **Log Center** | SSL Connection, Log Rotation: 6 months, 1 year, 2 years, 3 years, Email Notification |  |
| **iOS/Android™ Applications** | DS audio, DS cam, DS cloud, DS download, DS file, DS finder, DS photo+, DS video, DS note |  |
| **Windows™ Phone Applications** | DS audio, DS download, DS file, DS finder, DS photo+, DS video |  |
| **Warranty** | One year on parts and labor |  |
| **ICT EQUIPMENT** | **QTY** | **UNIT COST** | **TOTAL** |  |
| **SAN SWITCH WITH HDD UPGRADE (Upgrade Existing Storage System)** | **1 Lot** | 1,005,000.00 | **1,005,000.00** |  |
| **HDD Upgrade** |  |
| **TECHNICAL Specifications of Components** | 6 X 600GB 15K RPM 2.5" SAS Drive  |  |
| 3 X EFD 200GB SSD for Data 2.5" Drive |  |
| 1 X 2.5 DISK ARRAY ENCLOSURE |  |
| **TYPE/ CONFIGURATION** | Must be compatible to the existing EMC VNXe 3200 storage |  |
| **CAPACITY and SCABILITY** | Must provide a total of 2.1TB usable capacity requirement for UPGRADE using 600GB 15K SAS Drives @Raid5 |  |
| Must provide a total of 180GB usable capacity requirement for UPGRADE using 300GB SSD EFD Drives @Raid1 |  |
| **RAID SUPPORT** | Must support hardware RAID implementation such as RAID 1, 5, 6, 10 |  |
| **AVAILABILITY** | Redundant and hot-swap drives and controllers |  |
| **CONTROLLER** | Must have dual controller for Enclosure |  |
| **DRIVE INTERFACE** | At least 6Gb/s for all types of drives |  |
| **DRIVE SUPPORT** | Must support 2.5” drives |  |
| **WARRANTY** | COTERMINOUS to the existing EMC VNXe 3200 storage warranty  |  |
| **SAN SWITCH** |  |
| **TECHNICAL Specifications of Components** | 8 ACTIVE LICENSE PORTS with 8GB SFP TRANSCIEVERS |  |
| **TYPE/ CONFIGURATION** | • 24 ports in 8-port increments through Ports-on-Demand licenses at 8, 16, and 24 universal (E, F, M, FL, or N) ports |  |
| **PERFORMANCE** | • Full line-speed switching at: • 2.125 Gb/s line speed, full duplex • 4.25 Gb/s line speed, full duplex • 8.50 Gb/s line speed, full duplex Auto-sensing of 2, 4, and 8 Gb/s port speeds Optionally programmable to fixed port speeds Speed matching between 2, 4, and 8 Gb/s ports |  |
| **PORT TYPES** | • FL\_Port, F\_Port, M\_Port (Mirror Port), and E\_Port; self-discovery based on switch type (U\_Port); optional port type control |  |
| **INTERFACE FOR MANAGEMENT** | • Telnet, HTTP, SNMPv1/v3 (FE MIB, FC Management MIB); Auditing, Syslog, Change Management tracking; EZSwitchSetup wizard; Web Tools; EMC Connectrix Manager Converged Network Edition 11.x; SMI-S compliant, SMI-S scripting toolkit, trail licenses for select add-on capabilities• 10/100 Ethernet (RJ-45), in-band over Fibre Channel; serial port (RJ-45); USB; call-home integration enabled through Connectrix• Telnet, HTTP, SNMPv1/v3 (FE MIB, FC Management MIB); Auditing, Syslog, Change Management tracking; EZSwitchSetup wizard; Web Tools; EMC Connectrix Manager Converged Network Edition 11.x; SMI-S compliant, SMI-S scripting toolkit, trail licenses for select add-on capabilities• 10/100 Ethernet (RJ-45), in-band over Fibre Channel; serial port (RJ-45); USB; call-home integration enabled through Connectrix |  |
| **CABLES** | • Must have 4 LCLC Cables 5 Meters |  |
| **WARRANTY** | • 3 YEARS SOFTWARE & HARDWARE WARRANTY PREMIUM SUPPORT |  |
| **SUPPORT** | •Vendor must have local presence of support personnel |  |
|  | • Vendor must have a parts depot in country |  |
|  | • Customer must be able to open a trouble ticket or service request using web, email, or phone. |  |
| **Implementation Services** | • Initialization and configuration of storage system including basic zoning |  |
|  | • Creation of RAID groups and Pools |  |
|  | • Provision storage capacity to host |  |
|  | • Configuration of connectivity to other rackmount servers  |  |
|  | • Configuration of connectivity to VM Ware  |  |
|  | • Knowledge transfer |  |
| **ICT EQUIPMENT** | **QTY** | **UNIT COST** | **TOTAL** |  |
| **TELECONFERENCING EQUIPMENT** | **1 Unit** | 50,000.00 | **50,000.00** |  |
| **Target Application** | Must be Ideal for small conference rooms and huddle rooms using IP Voice |  |
| **Features** | Must be 7Khz HD Voice for clarity and intelligibility |  |
|  | Must be 7ft (2.1m) microphone pick up range |  |
|  | Must have High resolution backlit display for vital call information and multi-language support |  |
|  | Should Supports open SIP interoperability with leading hosted and premises based IP PBX Systems |  |
|  | Resist interference from mobile phones and other wireless devices  |  |
|  | Must be Integrated IEEE 802.3af Power over Ethernet (PoE) |  |
| **Specifications** |   |  |
| **Power** | Includes external universal AC power supply kit: 100-240V, 0.4A, 48V/19W |  |
| **Display** | Size (pixels): 248 x 68 (W x H)  |  |
|  | White LED backlight with custom intensity control  |  |
| **Keypad** | Standard 12-key keypad  |  |
|  | Context-dependent soft keys: 4  |  |
|  | On-hook/Off-hook, redial, mute, volume up/down  |  |
|  | 5-way navigation  |  |
|  | Menu |  |
| **Audio Features**  | **Loudspeaker** |  |
|  | \* Frequency: 250 – 7,000 HZ |  |
|  | \* Volume: Adjustable to peak volume 84 dB at 1/2 meter distance  |  |
|  | Voice activity detection  |  |
|  | Comfort noise fill  |  |
|  | DTMF tone generation / DTMF event RTP payload  |  |
|  | Low-delay audio packet transmission  |  |
|  | Adaptive jitter buffers |  |
|  | Packet loss concealment |  |
|  | Acoustic echo cancellation |  |
|  | Background noise suppression |  |
|  | **Supported Codecs** |  |
|  | \* G.711 (A-law and µ-law)  |  |
|  | \* G.729a (Annex A, B)  |  |
|  | \* G.722  |  |
|  | \* iLBC |  |
| **Call handling features**  | Shared call / bridged line appearance |  |
|  | Busy Lamp Field (BLF) |  |
|  | Distinctive incoming call treatment / call waiting |  |
|  | Call timer |  |
|  | Call transfer, hold, divert (forward), pick up |  |
|  | Called, calling, connected party information  |  |
|  | Advanced Local three-way conferencing (conference, join, split, hold, resume)  |  |
|  | One-touch speed dial, redial  |  |
|  | Call waiting |  |
|  | Remote missed call notification |  |
|  | Automatic off-hook call placement |  |
|  | Do not disturb function |  |
| **Other features**  | Local feature-rich GUI  |  |
|  | Time and date display |  |
|  | Corporate Directory Access (search, dial, save to local directory)  |  |
|  | Convenient volume adjustment keys |  |
|  | User-configurable contact directory and call history (missed, placed, and received)  |  |
|  | Customizable call progress tones |  |
|  | Wav file support for call progress tones |  |
|  | Unicode UTF-8 character support |  |
| **Network and provisioning**  | Ethernet 10/100 Base-T |  |
|  | IP Address Configuration: DHCP and Static IP  |  |
|  | Time synchronization with SNTP server |  |
|  | FTP / TFTP / HTTP / HTTPS server based central provisioning for mass deployments. Provisioning server redundancy supported |  |
|  | Web portal for individual unit configuration  |  |
|  | QoS Support – IEEE 802.1p/Q tagging (VLAN), Layer 3 TOS and DSCP  |  |
|  | Network Address Translation (NAT) support – static  |  |
|  | RTCP support (RFC 1889) |  |
|  | Event logging |  |
|  | Local dial plan |  |
|  | Hardware diagnostics  |  |
|  | Status and statistics |  |
|  | User selectable ringer tones |  |
|  | Field upgradeable |  |
| **Security** | Transport Layer Security (TLS)  |  |
|  | Encrypted configuration files |  |
|  | Digest authentication |  |
|  | Password login |  |
|  | Support for URL syntax with password for boot server  |  |
|  | HTTPS secure provisioning |  |
|  | Support for signed software executables |  |
| **Warranty** | Must be One year with premier service program that provides Service Partners with technical telephone support, advance parts replacement, software upgrades & updates, and access to Polycom’s enhanced support portal. The SLA must be included on the technical requirements |  |
|  | The bidder must be an authorized reseller of the brand being offered.  |  |
| **ICT EQUIPMENT** | **QTY** | **UNIT COST** | **TOTAL** |  |
| **VIDEO CONFERENCING EQUIPMENT** | **1 Unit** | 800,000.00 | **800,000.00** |  |
| **Codec** | The HD Codec solution must be ideal for large conference rooms |  |
| **Camera** | The camera must be 12x zoom and offers brilliant visual clarity |  |
| **Micrphone** | Must include Microphone Array |  |
| **Multipoint License** | can host video calls with up to 6 participants in HD quality at 720p30 |  |
| **Technology** | Must be Automatic gain control  |  |
|  | Must be Automatic noise suppression  |  |
|  | Must be Keyboard noise reduction  |  |
|  | Must have NoiseBlock™ technology  |  |
|  | Must be Acoustic Fence |  |
|  | Must have Live music mode  |  |
|  | Must have Instant adaptation echo cancellation  |  |
|  | Must have Audio error concealment  |  |
|  | Must have Siren Lost Packet Recovery™ (LPR™) technology  |  |
|  | Must have StereoSurround™ technology  |  |
| **Features** | Must be simple to use, with one-touch dial from the integrated calendar  |  |
|  | Flexible, interactive content collaboration  |  |
|  | High-performance video and content quality  |  |
|  | Simple installation and compact design for quick and easy deployment |  |
| **Specifications** |   |  |
| **Video standards and protocols**  | H.261, H.263, H.264 AVC, H.264 High Profile, H.264 SVC, RTV  |  |
|  | H.239/Polycom® People+Content |  |
|  | H.263 & H.264 video error concealment |  |
| **Video input**  | 1 x HDCI  |  |
|  | 1 x HDMI 1.3  |  |
|  | 1 x VGA  |  |
| **Video out**  | 2 x HDMI 1.3 |  |
| **Content video resolution** |   |  |
| **Input** | HD (1920 x 1080i), HD (1920 x 1080p)  |  |
|  | WSXGA+ (1680 x 1050)  |  |
|  | UXGA (1600 x 1200)  |  |
|  | SXGA (1280 x 1024)  |  |
|  | WXGA (1280 x 768)  |  |
|  | HD (1280 x720p), XGA (1024 x 768)  |  |
|  | SVGA (800 x 600)  |  |
|  **Output**  | WUXGA (1920 x 1200)  |  |
|  | HD (1920 x 1080)  |  |
|  | WSXGA+ (1680 x 1050)  |  |
|  | SXGA+ (1400 x 1050)  |  |
|  | SXGA (1280 x 1024)  |  |
|  | HD (1280 x 720) |  |
|  | XGA (1024 x 768)  |  |
|  | VGA (640 x 480)  |  |
| **Content frame rate**  | 5–60 fps (up to 1080p resolution at 60 fps)  |  |
| **Content Sharing**  | People+Content and People+Content IP |  |
| **Audio input**  | 1 x RealPresence Group microphone array input port (supporting a total of 4 microphone arrays)  |  |
|  | USB headset support  |  |
|  | 1 x HDCI (camera)  |  |
|  | 1 x HDMI  |  |
|  | 1 x 3.5 mm stereo line-in |  |
| **Audio output**  | 1 x HDMI  |  |
|  | USB headset support  |  |
|  | 1 x 3.5 mm stereo line-out |  |
| **Other interfaces**  | 2 x USB 2.0  |  |
|  | 1 x RS-232, 8-pin mini-DIN |  |
| **Network** | IPv4 and IPv6 support  |  |
|  | 1 x 10/100/1G Ethernet  |  |
|  | Auto-MDIX |  |
|  | H.323 and/or SIP up to 6 Mbps |  |
|  | Reconfigurable MTU size  |  |
|  | RS232 with API support  |  |
|  | Microsoft® Office Communications Server integration  |  |
|  | Microsoft® ICE support  |  |
|  | Microsoft Lync and Skype for Business support  |  |
| **Security** | Media Encryption (H.323, SIP): AES-128, AES-256  |  |
|  | H.235.6 support  |  |
|  | Authenticated access to admin menus, web interface and telnet API  |  |
|  | Network intrusion detection system |  |
|  | Local account password policy configuration  |  |
|  | Security profiles  |  |
|  | Web UI / SNMP Whitelists  |  |
|  | Local account and login port lockout |  |
| **Weight**  | 2.45 lbs |  |
| **Display** | Must include 55" Display with 2 HDMI Ports |  |
|  | Must be 1,920 x 1,080 (FHD) resolution |  |
|  | Must have the Pro:Centric SMART features that offers extended customizable tools; HTML5, Java and Flash |  |
|  | Must have fast booting time features |  |
|  | Aspect ratio of 8 modes (16:9, Just scan, Original, Full Wide, 4:3, 14:9, Cinema Zoom 1, Zoom) |  |
|  | Audio Output of 10W + 10W |  |
|  | VESA Compatibility |  |
|  | Basic Commercial Features of Welcome Screen, Lock Mode, One Channel Map, Hotel Mode, Instant on, USB Cloning, IR Out, TV Link Interactive |  |
|  | Connectivity: DLNA, WiDi, Miracast, WiFi Direct, DIAL |  |
|  | Built-In WiFi , Soft AP |  |
|  | Anti-theft System: Kensington Lock, Credenza/Security Screw Hole |  |
| **Warranty** | Must be One year with premier service program that provides Service Partners with technical telephone support, advance parts replacement, software upgrades & updates, and access to Polycom’s enhanced support portal. The SLA must be included on the technical requiremnts |  |
|  | The bidder must be an authorized reseller of the brand being offered.  |  |
| **ICT EQUIPMENT** | **QTY** | **UNIT COST** | **TOTAL** |  |
| **FILE STORAGE FOR DIVISIONS** | **25 Units** | 36,000.00 | **900,000.00** |  |
| **Technology** | Must be High performance 2-bay NAS server  |  |
| **Features** | Must have High-speed data transfer and must be AES-NI hardware encryption engine |  |
|  | Must be screw less drive bay design and hot-swappable support |  |
|  | Must be dual core processor |  |
|  | Must have 4K Ultra HD video transcoding that allows you to transcode H.264 4K videos to 1080p and stream them to high-definition TVs, digital media players, mobile handsets, and computers in the required format |  |
|  | Must have User Home feature that automatically create a "home" folder for every user account  |  |
|  | Must have Ultimate file center feature |  |
|  | Must be comprehensive network protocol support including FTP, SMB2, AFP, NFS and WebDAV. With Windows AD and LDAP integration |  |
|  | Must have Cloud Station Back up feature |  |
| **OS** | Must include DiskStation Manager |  |
| **Specifications** |   |  |
| **CPU** | Intel Celeron N3060 Dual Core 1.6 burst up to 2.48 GHz 64 bit  |  |
| **System Memory** | 1GB |  |
| **Storage** | 2 Drive Bays (Hot Swappable) |  |
|  | 2 x 2TB NAS HDD, Interface : SATA 6Gb/s, Cache : 64MB, Spin Speed : 5900RPM |  |
|  | \* Max Sustained Data Transfer Rate OD (MB/s): 159 |  |
|  | \* Voltage Tolerance, Including Noise (5V): ±5%  |  |
|  | \* Voltage Tolerance, Including Noise (12V): ±10%  |  |
|  | \* Load/Unload tested to 600,000 cycles |  |
| **Compatible Drive Type** | 3.5" SATA III / SATA II HDD |  |
|  | 2.5" SATA III / SATA II HDD  |  |
|  | 2.5" SATA III / SATA II SSD |  |
| **Supported RAID Type** | Hybrid RAID |  |
|  | Basic |  |
|  | JBOD |  |
|  | RAID 0 |  |
|  | RAID 1 |  |
| **RAID Migration** | Basic to RAID 1 |  |
| **File Sharing Capacity** | Maximum Local User Accounts: 2048 |  |
|  | Maximum Local Groups: 256 |  |
|  | Maximum Shared Folder: 256 |  |
|  | Maximum Shared Folder Sync Tasks: 4 |  |
|  | Maximum Concurrent CIFS/AFP/FTP Connections: 256 |  |
| **Snapshot Replication** | Maximum Snapshots per Shared Folder: 256 |  |
|  | Maximum Snapshots of all Shared Folder: 4096 |  |
| **External Ports)**  | 2 x USB 2.0 Port |  |
|  | 1 x USB 3.0 Port |  |
|  | 1 x eSATA Port |  |
|  | USB Copy |  |
| **Size (Height x Width x Depth)** | 165 mm x 108 mm x 233.2 mm  |  |
| **Weight** | 1.25 kg  |  |
| **Warranty** | One year on parts and labor |  |
|  | The bidder must be an authorized reseller of the brand being offered |  |
| **ICT EQUIPMENT** | **QTY** | **UNIT COST** | **TOTAL** |  |
| **INTERACTIVE MONITOR** | **1 Unit** | 100,000.00 | **100,000.00** |  |
| **Screen Size** | 43" 10 Point Multi Touch Display with Slim Bezel 27.0mm width |  |
|  | Must be IR (Infrared Rays) Spread technology  |  |
| **Panel Orientation** | Landscape & Portrait |  |
| **Interactive White Board Software** | Application software for business  |  |
|  | Integration of board page and application  |  |
|  | Character recognition function  |  |
| **DRAWING** | Pen / Brush / Spray / Eraser / Shape  |  |
| **DATA FORMAT**  | Intrinsic / PDF / JPG  |  |
| **MEDIA** | Image, Audio, Video  |  |
| **APP LINKAGE** | PowerPoint, Excel, Word, Internet Explorer  |  |
| **E-MAIL**  | Share writing/drawing data via e-mail  |  |
| **SCREEN SPLIT**  | 2 horizontal Screens  |  |
| **USAGE CONVENIENCE** | Preview / Navigation / Screen Lock  |  |
| **CAPTURE** | Full / Window / Automatic Copy & Paste  |  |
| **RECORDING** | Full / Window / Rectangle  |  |
| **ZOOM** | In / Out (100% ~ 400%)  |  |
| **WRITING SPACE RESIZE** | Resize From 1,920 x 1,080 to 3,840 x 2,160 |  |
| **Touch** | GUI for FHD/UHD resolution |  |
| **Available object size for touch**  | Ø 8mm |  |
| **Scan Time** | 9 ~ 14ms |  |
| **Accuracy** | 1mm |  |
| **Interface** | USB 2.0 |  |
| **Protection Glass Thickness** | 2.8T (Anti-Glare) |  |
| **Operating Systme Support** | Windows 7, Windows 8 / Mac OS X (10.7 or later) / Android / Linux (Kernel 3.9 or later) |  |
| **Touch Resolution** | 1,428 x 803 |  |
| **Overlay Dimension (W x H x D)** | 997 x 586 x 23.5 mm (Max 60 mm) |  |
| **Weight**  | 6.5kg |  |
| **Warranty** | One year on parts and labor |  |
| **ICT EQUIPMENT** | **QTY** | **UNIT COST** | **TOTAL** |  |
| **MANAGED NETWORK SWITCH (PoE)** | **24 Units** | 16,000.00 | **384,000.00** |  |
| **Technology** | Must be basic smart-managed, fixed-configuration Gigabit Ethernet Layer 2 switches  |  |
|  | Must provide non-blocking Gigabit per port performance |  |
|  | Must include SFP ports for fiber connectivity  |  |
|  | Must be Power over Ethernet Switch |  |
|  | Must be customizable operation using intuitive Web interface  |  |
|  | Must supports HTTP and HTTP Secure (HTTPS) |  |
|  | Flexible deployment options including wall, under table and desktop mounting  |  |
|  | Must be latest energy-saving capabilities, including Energy Efficient Ethernet (EEE) and idle-port power down.  |  |
|  | Must have Port Mirroring and Dual Flash Images |  |
|  | Must have Default DHCP client mode  |  |
|  | Must be 1U Height |  |
| **Connectivity** | Auto-MDI/MDIX  |  |
|  | IEEE 802.3X flow control  |  |
|  | Loop protection  |  |
|  | IEEE 802.3at Power over Ethernet (PoE+)  |  |
|  | PoE+ port availability  |  |
|  | Auto PoE power configuration  |  |
|  | PoE shut down mode  |  |
| **I/O ports and slots**  | 12 RJ-45 autosensing 10/100/1000 PoE+ ports; Duplex: 10BASET/100BASE-TX: half or full; 1000BASE-T: full only  |  |
|  | 12 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only  |  |
|  | 2 SFP 100/1000 Mbps ports (IEEE 802.3z Type 1000BASE-X, IEEE 802.3u Type 100BASE-FX)  |  |
| **Memory and processor**  | ARM Cortex-A9 @ 400 MHz, 128 MB SDRAM; Packet buffer size: 1.5 MB, 16 MB flash |  |
| **Performance** | 100 Mb Latency: < 7 µs (LIFO 64-byte packets)  |  |
|  | 1000 Mb Latency: < 2 µs (LIFO 64-byte packets)  |  |
|  | Throughput up to 38.6 Mpps (64-byte packets)  |  |
|  | Switching capacity: 52 Gbps  |  |
|  | MAC address table size 8000 entries  |  |
| **Security**  | Encrypts all HTTP traffic, allowing secure access to the browser-based management GUI in the switch |  |
|  | Monitors nine types of malicious attacks and protects the network by blocking these attacks |  |
|  | Provides security so that only authorized access to the Web browser interface is allowed |  |
| **Performance** | Half-/full-duplex auto-negotiating capability on every port  |  |
|  | IGMP snooping  |  |
| **Resiliency and high availability**  | IEEE 802.1D STP and IEEE 802.1W RSTP that Provides redundant links while preventing network loops |  |
|  | Link aggregation (trunking)  |  |
| **Warranty** | Limited Lifetime Warranty |  |
|  | The bidder must be and authorized reseller of the brand being offered |  |
| **ICT EQUIPMENT** | **QTY** | **UNIT COST** | **TOTAL** |  |
| **VOIP PHONE WITH ADAPTOR** | **40 Units** | 8,000.00 | **320,000.00** |  |
| **Technology** | Must be Business Media Phone |  |
|  | Must have 2 programmable lines/registrations |  |
|  | Must have 2.5" Graphical backlit LCD display with 5-way navigation cluster for control |  |
|  | Must be HD voice and Acoustic Fence Technology |  |
|  | Must have 2 x Ethernet 10/100 for network pass through |  |
|  | Must have RJ9 Headset support with electronic hook switch |  |
|  | Must have full duplex Type 1-compliant speakerphone features |  |
|  | Must be designed for interoperability and is certified to interoperate with the industry’s broadest range of PBX systems and SIP call control platforms |  |
|  | Must have Zero Touch Provisioning and web based configuration tool  |  |
|  | Must be simple to deploy, easy to administer, upgrade, and maintain |  |
| **User interface features**  | Must have Voicemail support  |  |
|  | Reversible desk stand/wall mount  |  |
|  | Unicode UTF-8 character support |  |
| **Feature Keys** | 4 context-sensitive “soft” keys  |  |
|  | 2 line keys with bi-color (red/green) LED  |  |
|  | “Home” feature key  |  |
|  | 4-way navigation key cluster with center “Select” key  |  |
|  | 2 volume control keys  |  |
|  | Dedicated hold key  |  |
|  | Dedicated headset key  |  |
|  | Dedicated hands-free speakerphone key  |  |
|  | Dedicated microphone mute key |  |
| **Call handling features** | Shared call/bridged line appearance  |  |
|  | Distinctive incoming call treatment/call waiting  |  |
|  | Call timer and call waiting  |  |
|  | Call transfer, hold, divert (forward), pickup  |  |
|  | Called, calling, connected party information  |  |
|  | Local three-way audio conferencing  |  |
|  | One-touch speed dial, redial  |  |
|  | Remote missed call notification  |  |
|  | Do not disturb function  |  |
|  | Electronic hook switch capable  |  |
|  | Local configurable digit map/dial plan |  |
| **Network and provisioning**  | SIP Protocol Support  |  |
|  | SDP |  |
|  | IETF SIP (RFC 3261 and companion RFCs)  |  |
|  | Two-port Ethernet switch  |  |
|  | 10/100Base-TX across LAN and PC Ports  |  |
|  | Manual or dynamic host configuration protocol (DHCP) network setup  |  |
|  | Time and date synchronization using SNTP  |  |
|  | FTP/FTPS/TFTP/HTTP/HTTPS server based central provisioning for mass deployments  |  |
|  | Provisioning and call server redundancy supported  |  |
|  | QoS Support–IEEE 802.1p/Q tagging (VLAN), Layer 3 TOS, and DHCP  |  |
|  | Network Address Translation (NAT) – support for static configuration and “Keep-Alive” SIP signaling |  |
|  | RTCP and RTP support  |  |
|  | Event logging  |  |
|  | Syslog |  |
|  | Hardware diagnostics  |  |
|  | Status and statistics reporting  |  |
| **Security** | 802.1X Authentication and EAPOL  |  |
|  | Media encryption via SRTP  |  |
|  | Transport Layer Security (TLS)  |  |
|  | Encrypted configuration files  |  |
|  | Digest authentication  |  |
|  | Password login  |  |
|  | Support for URL syntax with password for boot server address  |  |
|  | HTTPS secure provisioning  |  |
|  | Support for signed software executables |  |
| **Power Adaptor** | Must include External Universal AC Adapter 12V  |  |
| **Warranty** | Must be One year with premier service program that provides Service Partners with technical telephone support, advance parts replacement, software upgrades & updates, and access to Polycom’s enhanced support portal. The SLA must be included on the technical requirements |  |
|  | The bidder must be an authorized reseller of the brand being offered.  |  |

Prepared by:

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