Sub: Request for Quotation for Supply, Installation and Maintenance of Video conferencing system for Indian Bank Zonal Office, Upper Ground Floor, World Trade Centre, New Delhi. Tender Reference No. IB/ND/VC/2016-17 Dated 21.06.2016

Amendments to the technical specifications of the tender document:

SI No.	Tender Page No. & Clause	Technical specification as per tender	Amended Specifications	
1	Page 7 SL No. 1 Video Conferencing Main Systems	Camera with highly sensitive Exmor CMOS image sensor to capture detailed HD video (720p) at a smooth 60 frames per second - even on dull days or in poorly lit meeting rooms. An optional Full HD (1080p) upgrade shall be available for even higher picture quality in critical applications, Video Encoding H.263, H.263+, H.263++, H.264 Baseline Profile, H.264 High Profile, MPEG-4 SP@L3 (SIP only). Audio Encoding G.711 (3.4kHz@56/64kbps), G.722 (7.0kHz@48/56/64kbps),G.728 (3.4kHz@16kbps), MPEG-4 AAC-LC Mono (11kHz@64/96kbps), MPEG-4 AAC-LC Mono (22kHz@96kbps). Camera Image Sensor 1/2.8-type ""Exmor"" CMOS image sensor, Output Pixels (H x V) 1920 x 1080,Frame Rate 59.94 fps, S/N Ratio 50 dB,Zoom Ratio x144 zoom (12X optical zoom, 12X digital zoom), Horizontal Viewing Angle Approx. 71°, Pan/Tilt Angle Pan ±100°/Tilt +25°, Preset Position 100 positions HD video and should be able to store audio directly onto a USB flash memory device for easy sharing, with no need for any additional recording hardware. Frame rate Up to 60fps (H.263, H.263+, H.263++, H.264, H.264@720p, H.264@1080p, MPEG-4 SP@L3, except for H.263 4CIF)*2, Screen Layout Full Screen / PinP / PandP / PandPandP / Side by Side, Network Protocol TCP/IP, UDP/IP, DHCP, DNS, HTTP, TELNET, SSH, SNMP, NTP, ARP, RTP/RTCP, PPPoE, UPnP,Protocol Stack IPv4, IPv6,Bit Rate 64 kbps to 4,096 kbps, H.239 Presentation YES 1080 / SXGA / WXGA / 720 / XGA @30fps, Video Input HDMI x Video Output HDMI x 1 Audio Input Mic In (mini jack, plug-in power) x Audio	**Supply, Installation, Testing & Commissioning (SITC) of Video Conferencing Main Systems**	
			No. of sites	Min. 3 sites using in-built multi-site endpoint feature with each site at 720p resolution
			Camera	Camera with 1/3" CMOS/CCD with Capability for capturing video in poorly lit rooms. Camera mount / stand to be provided.
			Output Pixels (H x V)	1920 x 1080
			Frame Rate	Minimum 60 fps
			Zoom	12X optical zoom with 12X digital zoom
			Horizontal Viewing Angle	Minimum 65°
			Pan/Tilt Angle	Pan ±90°/Tilt+/-15°
			Preset Position	Minimum 25 positions
			Other features	• It should be able to register on the existing Gate Keeper available at Indian Bank's Head Quarter Chennai & Seamlessly work with the existing infrastructure setup at Bank (Polycom CMA 4000). • The PTZ camera and codec should be of same manufacturer. • In-built DSP to eliminate feedback and echo. • The unit should be capable of supporting other video features like content sharing through direct physical link with the system or via LAN. • Brief details on the VC recording facility and its setup shall be provided.
			Video Quality	Full HD (1080p)
			Video Standards	H.263, H.263+, H.263++, H.264 Baseline Profile, H.264 High Profile, MPEG-4 SP@L3 (SIP only) H.460.18, H.460.19 Firewall Traversal
			Audio Standards	G.711, G.722,G.722.1 Mono (11kHz@64/96kbps), MPEG-4 AAC-LC Mono (22kHz@96kbps).
			Screen layout	Screen Layout Full Screen / PinP / PandP / PandPandP / Side by Side
			Network Protocol	TCP/IP, UDP/IP, DHCP, DNS, HTTP, TELNET, SSH, SNMP, NTP, ARP, RTP/RTCP, PPPoE, UPnP, Protocol Stack IPv4, IPv6,Bit Rate 64 kbps to 4,096 kbps,
			H.239 Presentation	YES 1080 / SXGA / WXGA / 720 / XGA @30fps,

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		Output HDMI x 1 Network Interface ,Gigabit Ethernet (10BASE-T/100BASE-TX/1000BASE-T) x 1, Wireless LAN External Control mini - USB Other USB x 2. In-built recording option shall be provided. In addition to HDMI i/p & o/p, following component PINs also required: • VGA • S Component (videos) • 15 pin d-connectors (Camera to VC Processor) **Make- SONY / AVER/polycom**	Video Input/output	The unit should have minimum 2 video inputs first to HD camera, and Content (DVI-I or equivalent) and At least 2 No. of HDMI/DVI outputs to connecting to high definition display devices and recording devices.
			Other connectors	• VGA • S Component (videos) • 15 pin d-connectors (Camera to VC Processor) • USB 3.0
			Audio Input/output	**Input:** • Microphone Input (quoted system should support up to 4 mics) • **3 X Mics (VC omni-directional HD MICS) should be provided** • 1 PC Audio /Aux port **Output:** • 1 x stereo output (RCA) and 1 HDMi output
			Other audio features to be supported	• Echo Cancellation • Automatic gain control • Automatic noise suppression • Adaptive post filtering
			Bandwidth / IP Features	• H.323/SIP up to 6 Mbps point to point • Support H.320 up 2 Mbps through gate keeper. • Packet Loss Recovery feature on H.323 call • SIP up to 4 Mbps in addition to H323 protocol. • Calls can be made on SIP or H323 without having to restart or reconfigure the endpoint.
			Network Interface	Gigabit Ethernet (10BASE-T/100BASE-TX/1000BASE-T, IPv6 compatible) – 1 No.
			User Interface:	• The system should support Password protected system menu. • Directory Services. • Web-based System Management- SNMP V3 support.
			Make	**SONY/POLYCOM/AVER /CISCO**
2	Page 8 SL No. 2	SD PTZ Color Video Camera for Covering the Other people picture.	Requirement stands deleted	
3	Page 9 SL No. 3	**Hydraulic Pop Up Box on Conference Table** :- SITC of Hydraulic Pop Up Box for connecting computer Tabletop Interconnect box Inbuilt Port, VGA/HDMI, Power, Audio.	Quantity is reduced to 5. **Revised specifications for SITC of Hydraulic Pop Up Box on Conference Table:** **VIDEO INPUT/OUTPUT**	

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		Quantity: 21 **Make- BESTNET / EXTRON / FINESTEELS**	1 pass-through VGA 1 pass-through HDMI Connectors 15-pin HD female to 15-pin HD female on a 6" (15 cm) pigtail HDMI female to HDMI female on a 10" (25 cm) pigtail **AUDIO INPUT/OUTPUT** 1 pass-through stereo, unbalanced Connectors 3.5 mm TRS jack to 3.5 mm 3 pole captive screw connector on a 10" (25 cm) pigtail **DATA INPUT/OUTPUT** Standards CAT 6, TIA/EIA T568B Connectors 1 female RJ-45 to 1 female RJ-45 **POWER** HSA 300 (US) 125 VAC, 50-60 Hz, 12 A max. HSA 300 (EU/Multi-Region/UK) 240 VAC, 50-60 Hz, 10 A max. USB power Power supply External Input: 100-240 VAC, 50-60 Hz Output: 12 VDC, 1 A Power output USB: 5 VDC, 2.1 A, 10.5 watts total **(Make: Extron / Crestron / AMX)**
4	Page 9 SL No. 4	**HDMI Switcher 4 in 4 out for laptop source:-** Each port to support HDMI inputs. Should support high video resolution up to 1920 x 1200 including 720p, 1080i & even 1080p. Interface compatible with Transition Minimized Differential Signaling (TMDS). Should support both Video and Audio Signals. Should support signaling rates up to 1.65Gbps of UXGA Display, Video Bandwidth up to 1.65GHz. **Make- Milestone / Bestnet / KRAMEL**	**SITC of Switcher:** Should be controllable through front panel source selection switches with provision for RS232C & contact Closure and also using IR / RF remote Control. Resolution range Up to 1080p (HDTV) or 1920x1200 (the highest resolution of the single-link DVI standard) @ 60 Hz Data rate: 6.75 Gbps (2.25 Gbps per color) or above Pixel clock: 165 MHz or above Standards DVI 1.0, HDMI 1.3, VGA Switching speed: 200 ns. HDTV Compatible & HDCP Compliant. Video Inputs-10 HDMI & 5 computer graphics video on 15−pin HD (VGA) connectors. Scaled Outputs-2 HDMI,22 Output Resolutions-Up to WUXGA/1080p, Auto Input Scanning and Switching, Color Sampling-Supports 4:4:4 (RGB and YUV) as well as 4:4:2 (YUV) color sampling, Audio Outputs-1 S/PDIF on an RCA connector, 1 balanced stereo audio on a terminal block, embedded audio on the HDMI outputs **(Make: Kramer / Extron / Crestron)**
5	Page 9 SL No. 5	Adopter HDMI to Phono Stereo / 3RCA with cable for passing audio connectivity to Video Conference.	Requirement stands deleted

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6	Page 9 SL No. 6	**Motorized Screen:-** • Size:7 ft X 5ft , Width 7ft & Height 5ft, diagonal 100" , • High Contrast Matte White, • Video Spectra 1.5, • Remote range up to 40mtrs. **Make- LIBERTY SHOW / GTC SHOW/SNOWHITE**	**SITC of Motorized Screen** • Size:6 ft X 4ft , Width 6ft & Height 4ft, diagonal 84" , • High Contrast Matt White, • Low Noise Motor • Video Spectra 1.5, • Remote control with range up to 40mtrs. **(Make-Draper / De-lite)**
7	Page 9 SL No. 7	**Ceiling Mount Kit for Projector:-** 2 X 2 universal Ceiling mount kit for hanging the projector from ceiling **Make- CUSTOMIZED**	**SITC of Ceiling Mount Kit for Projector** Standard Duty Ceiling Mount Bracket (Up to 5 Kg Projector) (Make: Customized)
8	Page 9 SL No. 8	**Multimedia Projector 5200 ANSI or more :-** Resolution- XGA 1024x7687, Contrast Ratio- 3000:1 Interface- VGAx2, HDMIx2, C-Videox1, S-Videox1, RJ-45x1, RS232x1, Manual Zoom/Focus-, Optical Zoom 1.45x, Lens shift, H/V Keystron Speaker output 10W **Make- SONY / EPSON/NEC**	**SITC of LCD Projector** Resolution: WXGA Lumens: 4000 Connectivity: HDMI 19-pin x 1 (compatible with HDCP, Deep Color), audio signal: linear PCM (sampling frequencies: 48 kHz, 44.1 kHz, 32 kHz) COMPUTER 1 IN - D-sub HD 15-pin (female) x 1 (RGB/YPBPR/YCBCR) COMPUTER 2 IN /MONITOR OUT - D-sub HD 15-pin (female) x 1 (RGB), D-sub HD 15-pin (female) x 1 (RGB), (input/output selectable using on-screen menu) VIDEO IN Pin jack x 1 (Composite VIDEO) S-VIDEO IN Mini DIN 4-pin x 1 (S-VIDEO) AUDIO IN 1 M3 x 1 (L-R x 1) AUDIO IN 2 (MIC IN) M3 x 1 (L-R x 1) for audio input or for microphone connection (variable) AUDIO IN 3 Pin jack x 2 (L, R x 1) AUDIO OUT M3 x 1 (L-R x 1) for output (variable) LAN RJ-45 x 1 (for network connection, 10BASE-T/100BASE-TX, compliant with PJLink™) SERIAL IN D-sub 9-pin (female) x 1 for external control (RS-232C compliant) **(Make: Panasonic / Casio / NEC / SONY / EPSON)**
9	Page 9 SL No. 9	**P/F LED TV 32" OF SONY MAKE with Motorized Lift** Motorized Lift Customized with 5 Yrs Motor Warranty. There should be controlling switch at Chairman seat for switching ON/OFF the LED TV	**SITC of LED TV with Wall mount bracket** • 164cm or 65" Diagonal with 4k resolution (3840x2160). • View angle H/V 178/178°, • Aspect ratio 16:9, • Picture In Picture should be available • Audio Output (PMPO) (Watts) - Minimum 20W • Connectivity : HDMI Input • USB Port - 2 (Side) • Composite Input - 2 (Rear) • Digital Audio Out - 1 (Rear) • Controlling switch to switch ON / OFF the TV should be provided at chairman's seat.

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			(Make: LG /Panasonic/ Samsung / Sony)
10	Page 9 SL No. 1	**Boundary Layer Microphone with on/off:-** Frequency Response: 50 to 17000 Hz Output Impedance: up to 180Ω Programmable on/off switch and LED on/off indicator. Maximum SPL (1 kHz at 1% THD, 1 kΩ load) 117.0 dB Dynamic Range at 94.0 dB Power Requirements 11 to 52 Vdc phantom Surface-mount microphone. Open circuit sensitivity at 1 kHz, Cardioid Cartridge: -27.5dBV/pa (42.2mV) Electret Condenser type Programmable on/off switch and LED on/off indicator. Three operating modes: touch-on/touch-off, press to talk, and press to mute **Quantity: 20** **Make- SHURE / TOA/AKG**	**SITC of Boundary Layer Microphone with on/off for local conference** - Should be placed at 2'-3' intervals - Frequency Response: 50 to 17000 Hz - Output Impedance: up to 180Ω - Programmable on/off switch and LED on/off indicator. - Maximum SPL (1 kHz at 1% THD, 1 kΩ load) 117.0 Db - Dynamic Range at 94.0 dB - Power Requirements 11 to 52 Vdc phantom - Surface-mount microphone. - Open circuit sensitivity at 1 kHz, - Cardioid Cartridge: -27.5dBV/pa (42.2mV) - Electret Condenser type Programmable on/off switch and LED on/off indicator. - Three operating modes: touch-on/touch-off, press to talk, and press to mute **(Make: SHURE/AKG/Beyerdynamic/Audiotechnica)** **Quantity: 21**
11	Page 10 SL No. 2	Chairman (19 inch.) Microphone with on/off Base (Quantity : 2)	**SITC of Chairman (19 inch.) Gooseneck Microphone and stand with on/off Base** - Frequency Response : 50 to 17000 Hz - Output Impedance : up to 180Ω - Signal to noise ratio at 94 dB SPL Cardioid - Open circuit sensitivity at 1 kHz, ref. 1V/Pascal–35.0 dB (17.8 mV - Maximum SPL (1 kHz at 1% THD, 1 kΩ load) 124.2 dB - Maximum Equivalent output noise : 28.0 dB - Dynamic Range at 1 kΩ Load 96.2 dB - Power Requirements 11 to 52 Vdc phantom, 2.0 mA **Make: SHURE/AKG/Beyerdynamic/Audiotechnica** **Quantity : 2**
12	Page 10 SL No. 3	**Automatic Mixer/DSP :-** 8 Channel Microphone input Two Aux-level input LED indication Front-panel headphones output with level control Frequency Response 50 Hz to 20000Hz (±1 dB) Equalization inbuilt Phantom Power up to 48 Vdc Bi-color LED indication of channel activation and clipping Control System Compatible Linking capability up to 400 microphone Mountable in a single 19" rack space via integral rack-mount	**SITC of Digital Signal Processor for 23 microphones**: Multi Channel Microphone input Two Aux-level input LED indication Front-panel headphones output with level control Frequency Response 50 Hz to 20000Hz (±1 dB) Equalization inbuilt Phantom Power up to 48 Vdc Bi-color LED indication of channel activation and clipping Control System Compatible Linking capability up to 400 microphone Mountable in a single 19" rack space via integral rack-mount

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		Peak-responding output limiter with selectable thresholds and LED indicator Logic Operation should be available **Quantity : 2** **Make-SHURE / TOA/STUDIO MASTER**	Peak-responding output limiter with selectable thresholds and LED indicator Logic Operation should be available **Quantity : 1-3 depending upon the no. of channels available in the DSP** **(Make: BSS / Shure / Biamp)**
13	Page 10 SL No. 4	**Ceiling speaker:-** Power RMS Out put Up to 15W Overall Dia up to 8" Frequency Response 80 to 18khz Line Voltage 70V/100V Driver Sensitivity up to 87db Speaker Type Coaxial **Quantity : 8 Nos.** **Make- QUEST / TOA / BOSCH**	**SITC of Ceiling speaker** **System** Freq. Range (-10 dB)1: 80 Hz - 20 kHz Power Capacity2: 80 Watts Continuous Program Power 40 Watts Continuous Pink Noise Nominal Sensitivity3: 86 dB SPL @ 1 m (3.3 ft) Nominal Coverage Angle4: 130° conical coverage Directivity Factor (Q): 2.4 averaged 500 Hz to 4 kHz Directivity Index (DI): 3.8 averaged 500 Hz to 4 kHz Rated Maximum SPL: 102 dB @ 1 m (3.3 ft) Nominal Impedance (24C): 16 ohms (Min Z 16.1 ? @ 320 Hz) Transformer Taps (24CT): 070V: 30W, 15W, 7.5W & 3.7W taps 100V: 30W, 15W, & 7.5W taps **Transducers:** Low-Frequency: 100 mm (4.0 in) Polypropylene-coated, 1" coil on aluminum former High-Frequency: 19 mm (0.75 in) Titanium coated polyester **Quantity: 6** **(Make: JBL / Bose / Extron)**
14	Page 11 Sl No. 5	**Amplifier:-** Rated output RMS Wattage 240W Sensitivity ±385mV Frequency Response 30Hz - 12kHz (+/-3dB) Impedance @10k ohms Signal to noise Ratio up to ≥85db Input interface XLR Battery Voltage 24VDC Output interface XLR & 6.3mm Phono Jack Total Harmonic Distortion ≤ 0.1% @ 1kHz Speaker output 8Ω ,70V/100V Built-in band-pass filter (80Hz to 16kHz) Main voltage 115V/230V Power ON indicator Mountable Desktop & 19" rack. **Make- QUEST / BOSCH / TOA**	**SITC of Amplifier** Amplifier: 75 watts x8 channel amplifier@ 8 ohm , Sensitivity-1.4 V, Signal to Noise Ratio-110 dB, THD (full rated power, 20 Hz - 20 kHz)-< 0.05%, Frequency Response (at 1W, 4/8 ohms)-+/- 0.5 dB, Voltage Gain-25 dB Speaker output 8Ω ,70V/100V Built-in band-pass filter (80Hz to 16kHz) Mountable Desktop & 19" rack. **Quantity: 1** **Make- QSC / BOSE / Extron**

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15	Page 11 Sl No. 6	**Voice Recorder :-** Recording to SD(HC) cards Interface Balanced & Unbalanced 19" Rack mountable Format Support MP3 Data Transfer through USB to computer Power on auto play Input sensitivity 500mvrms Input impedance 75Ω USB Connection to PC for fast secure download to read LCD display Dictation/Conference/Lecture recording Facility Max SD Card 32GB **Make- DENON / AVERMEDIA / PANASONIC**	**SITC of AV Recorder** Should Capture HD footage, Pause & resume recording facility should be available Recording through USB & HDD, Storage: 2TB HDD (Internal/External) Input: HDMI, Component video & audio L/R, 3.5 Audio, Microphone, Output: HDMI, Headphone, 3,5mm audio, 19" Rack mountable, Data Transfer through USB to Computer, Power on auto play, **(Make- DENON / AVERMEDIA / PANASONIC)**
16	Page 11 Sl No. 7	**Speaker cable :-** 2 core of high quality with minimum data loss, 1.13mm, AWG-16.foil-shielded, twisted-pair, Capacitance: 8.5 pF ((per foot at a frequency of 10 kHz), Conductor Stranded bare copper, Insulation PVC. **Quantity: 100 Metres** **Make- CHETAN / BESTNET**	**SITC of Speaker cable** 2 core of high quality with minimum data loss, 1.13mm, AWG-16.foil-shielded, twisted-pair, Capacitance: 8.5 pF ((per foot at a frequency of 10 kHz), Conductor Stranded bare copper, Insulation PVC. **Quantity: 100 Metres** **Make: AMX / Kramer / Extron**
17	Page 11 Sl No. 8	**Microphone Cable:-** High quality with minimum data loss, 0.4mm, AWG-20, ruggedness, flexibility, flex life and interference immunity. Low impedance, Operating Temperature Range:-30°C To +60°C, Overall Nominal Diameter:5mm\ **Quantity : 275 Metre** **Make- CHETAN / BESTNET**	**SITC of Microphone Cable** High quality with minimum data loss, 0.4mm, AWG-20, ruggedness, flexibility, flex life and interference immunity. Low impedance, Operating Temperature Range:-30°C To +60°C, Overall Nominal Diameter:5mm **Quantity : 275 Metre** **Make: AMX / Kramer / Extron**
18	Page 12 Sl No. 10	**Equipment Rack:-** With lockable rear and front glass door, power strip, castor wheel for easy movement Large cable entry in bottom Grounding and bonding stud installed in base Finished in a durable textured powder coat for all the above audio main systems. **Make- EXTRON / PRESIDENT/MILESTONE**	**SITC of Equipment Rack** With lockable rear and front glass door, power strip, castor wheel for easy movement. Large cable entry in bottom Grounding and bonding stud installed in base. Finish in a durable textured powder coat for all the above audio main systems. **(Make- EXTRON / Valrack / President)**

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| 19 | Page 11 Sl No. 9, Page 12 Sl No. 11 and Page 12 Sl No. 12 | Bulk Connectors, and HDMI cable 3 Mtrs | HDMI Cable | 15 | Mtr | SITC of Bulk Connectors for complete systems (Audio, Video projection etc.), HDMI Cable 15 Mtr, HDMI Cable 3 Mtrs VGA patch cord

Quantity: 1 Lot. Length: as per site requirements (Make: Kramer/Extron/AMX/Falcon) |