Parameters for Technical Compliance

SI.No.	Parameter	Essential / Desirable
INTERACTIVE TOUCH MONITOR FOR CHAIRMAN		
01	Screen Size: 21.5 Inches Resolution: 1920 x 1080 (Full HD) Display Color: 1.07 Billion Colors Brightness: 250 cd/m2 View Angle: 178 degree (H)/178 degree (V) Touch Screen: Projected Capacitive Touch Touch Points: 10 points Response Time: 5 ms Writing Style: Finger or Pcap Touch Pen	Essential
02	Touch Tolerance: +-2mm, edge area +-5mm Supported OS: Windows, Linux, macOS, Android, Chrome OS Connectivity Ports: VGA, USB Touch, HDMI, DVI/DP, 2 x 5W Speakers Power Supply: AC 100-240V, 50/60Hz Environmental Conditions: Working Temp: -10C to 40C, Humidity: 10-80 Percentage Warranty: 1Year	Essential
CONFERENCE SYSTEM-DELEGATE UNIT		
01	Type: Wired Table Top unit with built in speaker and Rj45 Loop in and out Speaker: Internal high-fidelity loudspeaker Transmit technology: High fidelity sound by zero loss audio transmit technology Audio Sampling and Frequency response: 48K audio sampling rate and 20Hz-20KHz frequency response Special Features: Support AGC (Automatic Gain Control,15 segment)/ AFC (Adaptive Feedback Cancellation)/ ANC(Active Noise Control 15 segment)/ Mix (Auto-Mix) technology	Essential
02	Control & Indicators: OLED Display, MIC ON/OFF, Volume up and down. Interfaces: Socket for Pluggable gooseneck microphone 3.5mm stereo Headphone jack 2x RJ45 Connectors	Essential
03	Input impedance: 2 kilo ohms Signal to Noise Ratio: 70 dB Frequency response: 20 - 20000Hz Microphone: Cardioid,Sensitivity- 46dBV/Pa,Length-485mm	Essential
CONFERENCE CHAIRS		
01	Dimensions: Width: 76.1cm; Depth: 76.1cm; Height:113.6cm; Seat Height: 44.4cm; SEAT ASSEMBLY: The seat assembly should be made up of 1.2 cm, thick hot-pressed Plywood upholstered with fabric upholstery covers and moulded Polyurethane foam.	Essential
02	BACK ASSEMBLY: The back assembly. Should be made of powder coated (OFT 40-60 microns) tubular frame of O 2.54 +-0.03cm. x 0.2 +- 0,016cm.thick. MSERW tube designed with contoured lumbar support for extra comfort. The back should be upholstered using double layer spacer mesh fabric with high tenacity yarn.	Essential
03	HIGH RESILIENCE (HR) POLYURETHANE FOAM: The HR polyurethane foam should be moulded with density =45+/-2 kg/m3 and hardness load 16 +- 2 kgf for 25% compression. ARMRESTS: The one-piece armrests should be injection moulded from black Co-polymer Polypropylene	Essential
04	CENTER-TILT mechanism: The mechanism should be designed with the following features: 360 degree revolving type. 17 +- 2 degree maximum tilt on pivot at centre Upright position locking	Essential
05	5 PNEUMATIC HEIGHT ADJUSTMENT: The pneumatic height adjustment has an adjustment stroke of 11.0 +-0.3cm, TELESCOPIC BELLOW ASSV: The bellow should be 3 piece telescopic type and injection moulded in Black Polypropylene. PEDESTAL ASSEMBLY: The pedestal should be injection moulded in black 33% glass-filled Nylon66 and fitted with 5 nos. twin wheel castors. The pedestal should be 66.3 +-0.Scm, pitch-center dia. (76 +-1.0cm with castors.)	Essential
06	TWIN WHEEL CASTORS: The twin wheel castors should be injection moulded in black nylon Certifcations: GRIHA & SVAGRIHA, GREEN PRO, and GREENGUARD	Essential

Parameters for Technical Compliance

Sl.No.	Parameter	Essential / Desirable
	U- TYPE CONFERENCE TABLE WITH USING PLYWOOD FOR FRAMING TOP, LEGS, CABLE BOX, WITH VINEER AND ITS POLISHING (TABLE SIZE: 640 SFT)	
01	31 seater U Shaped Width: 12250MM Depth: 3200MM Height: 775MM	Essential
02	Color: conference table color should be Red Shadow Wood veneer Components: 18 MM thick table top & wooden panel legs in veneer finish	Essential
03	Construction: Made using E1 grade engineered wood Power sockets to be provided under the table.	Essential
	98 INCH DISPLAY TV 4K	
01	Display Panel Diagonal size: 65 Inches or higher Resolution : 3840 x 2160 (4K or Higher) Display Color: 1.07 Billion or Higher Brightness: 350cd/m2 (Min) & 500cd/m2(Max) Viewing Angle: +-178 or better viewing angle Contrast ratio: 1200:1 Dynamic Contrast Ratio: 30000:1	Essential
02	Response Time: Not more than 5 ms Lifetime: 50,000 hours or more Display - Connectivity Ports:- Front Interface: USB2.0 x 2, Keys : Power/Homepage/Screen down/Record/Touch lock/Setting Rear Interface:- USB 3.0 : 1 USB 2.0 : 1, HDMI IN : 2, VGA : 1, AUDIO IN : 1, RS232 : 1, RJ45 IN : 1, EARPHONE : 1 COAX: 1	Essential
03	Smart System(Android):- CPU: 8 core A55 or better GPU: Quad-core MaliG52 or better Android version: Android 12.0 or Higher (With Play store) Built-in Software: Settings, User Manual, Float tool, Side tool bar, Note, Vote, Screen recording, Content sharing, text recognition. 4 Application split screen, screen recording, screen capture. U disk lock screen, USB port Block, Multi-user management Certification BIS (Indian), CE, FCC & ROHS certification. Warranty: 2 Years or Higher.	Essential

Parameters for Technical Compliance

Sl.No.	Parameter	Essential / Desirable
CONFERENCE SYSTEM CONTROLLER		
01	Technology: The unique digital ring network technology achieve full-digital signal transmission and processing. Audio Sampling and Frequency: response48K audio sampling rate and 20Hz- 20KHz frequency response. Special Features: Output 16 segment equalized EQ to achieve sound field adjustment; pressure limit, which can recognize the noise gate passed by human voice. AGC automatic volume gain control; AFC automatic feedback suppression and auto-mix technology,advanced noise cancellation technology,Echo cancellation.	Essential
02	Output Zone Control: 6 separated output zones function, each zone is automatically adjusted according to the volume of the position of the microphone, achieve longer distances pickup without whistle. Recording: USB audio recording Discussion Units Support: Single controller can support up to 90 units, by using additional Extension Main Units can be extended up to 5200 units Audio Input: 2 channel audio input, XLR or RCA type, for local audio input or remote video-conferencing input.	Essential
03	Audio Output: Maximum 8-channel audio output, XLR, RCA and Phoenix type, can be connected to simultaneous interpretation output or partitioned output Control Port: RS232 central control, realize microphone switch, priority, volume and other control Camera Control: RS232 or RS485 to send the PELCO/VISCA protocol to realize camera auto-tracking function. Limit on the number of active speaking persons: Active units at the same time will be 10 Chairman and 10 Delegates	Essential
04	Discussion modes: OPEN Free for all, limited by the active units setting by controller VOICE Can activate MIC by detecting sound without press button, OVERRIDE First in First out, APPLY To apply then to speak. Control & Indicators: LCD display to show all the operations and results 4-Way button for menu operate One-button press to start recording light indicator Master volume control knob	Essential
CONFERENCE SYSTEM SPEAKERS		
01	Enclosure Material: The system should be made of ABS Plastic Woofer type: The system should be have polypropylene cone woofer Woofer size: The system should be have woofer size of 5.25 or higher Tweeter type: The system should be have Titanium dome type Tweeter Tweeter size: The system should be have Tweeter size of 1 or higher Frequency response: It should be frequency bandwidth 90HZ - 20 kHz	Essential
02	Impedance: It should have impedance of 8 ohms or higher SPL (Sound Pressure Level): It should have SPL of 90dB or higher Power (RMS): It should have 50 watts or higher Power (RMS) Connectors: It should have 1 (one) pair metal binding terminal type connectors Type of Mounting: It should be wall-mounting or higher Dual axis Mounting: It can be mounted vertically or horizontally in both axis	Essential
ROOM SIZE: 1900 SFT FOR COMPLETE WOODWORK AND FIBRIC ACOUSTIC		
01	Room Size: 1900SFT Wood: high grade quality pine wood Wood Boards: 18mm wood wool boards Foam: 12mm Foam Fabric: Sound absorbing acoustic fabric for all walls fabric width: 54 inches Fire retardant: yes NRC:>=0.85	Essential

Parameters for Technical Compliance

Sl.No.	Parameter	Essential / Desirable
15U FLOOR MOUNT RACK WITH POWER		
01	Rack Standard: Conforms to DIN 41494 or equivalent standard. Construction: Welded OR CKD (Knock Down) Front Door: Lockable toughened glass door Basic Frame: Steel Rear Door: Vented Steel Dual Door Equipment Mounting: DIN Standard 10mm Sq. Slots / Direct M6 Tap Mounting Angle: 19" Mounting angles made of formed steel. Standard Finish: Powder Coated	Essential
02	Top and Bottom Cover: Welded to Frame, Vented and Field Cable entry exit cut outs Mounting Option: Castor wheels (Front 2 wheels with Break and rear without break) Or Levelers or Base plinth Standard Color: Black or Grey.	Essential
4 X 4 SWITCHER UNIT		
01	4X4 HDMI Matrix - Easily connect up to four HDMI input source and distribute them independantaly to any of the four HDMI Output Display Ports. Perfect for High speed digital performance connection between 4 sources and 4 video displays without signal degradation.	Essential
02	DOWNSCALE Function - This device supports mixed 4K & 1080p display ports. Each output supports downscale functionality, it can display 4K or downscale to 1080P. It can also display same or 4 different screen on all 4 displays. (The user can display the same or different screen on four displays)Input ports: 4 HDMI (female type); Output ports: 4 HDMI (female type)	Essential
03	FULL VIDEO/AUDIO Support - HDCP 2.2 Compliant, Supports Up to UltraHD 4K @60Hz YUV 4:4:4 8-bit, HDR (at 4K @60Hz YUV 4:2:0 10-bit), HDMI 2.0a, HDCP 2.2, 18Gbps. Supports up to 7.1-channel audio, Dolby Digital, DTS Digital, Dolby TrueHD, and DTS-HD Master audio formats.	Essential
CONFERENCE SYSTEM- CHAIRMAN UNIT		
01	Type: Wired Table Top unit with built in speaker and Rj45 Loop in and out Speaker: Internal high-fidelity loudspeaker Transmit technology: High fidelity sound by zero loss audio transmit technology Audio Sampling and Frequency response: 48K audio sampling rate and 20Hz-20KHz frequency response. Special Features: Support AGC (Automatic Gain Control,15 segment)/ AFC (Adaptive Feedback Cancellation)/ ANC(Active Noise Control 15 segment)/ Mix (Auto-Mix) technology	Essential
02	Chairman Priority: Chairman unit has priority to close all other units or mute them temporarily and consent the request for speaking from delegate Control & Indicators: OLED Display, MIC ON/OFF, Chairman unit with priority button and consent button for the delegates, Volume up and down Interfaces: Socket for Pluggable gooseneck microphone 3.5mm stereo Headphone jack 2x RJ45 Connectors	Essential
03	Input impedance: 2 kilo ohms Signal to Noise Ratio: 70 dB Frequency response: 20 - 20000Hz Microphone: Cardioid,Sensitivity-46dBV/Pa,Length-485mm	Essential

Parameters for Technical Compliance

Sl.No.	Parameter	Essential / Desirable
CHAIRMAN CHAIR		
01	Dimensions: Width: 76.1cm; Depth: 76.1cm; Height:113.6cm; SEAT/BACK ASSEMBLY: The seat is made up of 1.5 +- 0.1cm thick. Hot pressed plywood measured.The Back is made up of injection moulded glass filled polypropylene & upholstered using Net fabric with high tenacity yarn.	Essential
02	HIGH RESILIENCE (HR) POLYURETHANE FOAM: The HR polyurethane foam is moulded with density =55+/-2 kg/m3 and hardness 16 +- 2 kg as per 15:7888 for 25% compression.	Essential
03	ARMRESTS (ADJUSTABLE){PULSAX, PULSAL}: The adjustable armrest is designed with the following features: Up-Down adjustment-6 steps (7.2 +- 0.5cm ranges) Armrest top is mounted on Armrest structure made of glass filled Nylon, Armrest Top is PU moulded over glass filled Nylon insert.	Essential
04	LUMBAR SUPPORT ASSEMBLY: The Lumbar support consists of polypropylene pad. The Height of Lumbar pad can be adjusted through two projecting knobs provided on the rear side of the pad. Lumbar pad has an adjustment of 8.0 +- 0.5 cm in height.	Essential
05	FRONT PIVOT SYNCHRO MECHANISM: The adjustable tilting mechanism is designed with the following features: 360 Degree revolving type, Single point control. Front-pivot for tilt with feet resting on ground ensuring more comfort. Tilt tension adjustment. 4-position locking with anti-shock feature. Seat/back tilting ratio of 1:2.	Essential
06	PNEUMATIC HEIGHT ADJUSTMENT: The pneumatic height adjustment has an adjustment stroke of 10.0 +- 0.3 cm PEDESTAL ASSEMBLY: The pedestal is injection moulded in black 30% glass-filled Nylon and fitted with 5 nos. twin wheel castors. The pedestal pitch-center dia is 066.1 +- 0.5 cm. (76.1 +- 1.0 cm. with castors).	Essential
CONFERENCE VISITORS CHAIRS		
01	Dimensions: Width: 60.9cm; Depth: 64.3cm; Height:99.5cm; Seat Height: 44.8cm SEAT ASSEMBLY: The seat assembly should be made up of 1.2 and 0.1 cm. thick hot-pressed plywood , upholstered with fabric upholstery covers and moulded Polyurethane foam.	Essential
02	BACK ASSEMBLY: The back assembly. Should be made of powder coated (OFT 40-60 microns) tubular frame of O 2.54 ±0.03cm. X 0.2 ±0.016cm.thk. MS ERW tube designed with contoured lumbar support for extra comfort. The back should be upholstered using double layer spacer mesh fabric with high tenacity yarn.	Essential
03	HIGH RESILIENCE (HR) POLYURETHANE FOAM: The HR polyurethane foam should be moulded with density =45+/-2 kg/m3 and hardness load 16 ± 2 kgf for 25% compression. TUBULAR FRAME: The powder coated (DFT 40-60.microns) tubular frame should be cantilever type & made of 2.54 ± 0.03cm. x 0.2 ± 0.016cm thick MS.E.R.W. Tube.	Essential

Parameters for Technical Compliance

Sl.No.	Parameter	Essential / Desirable
CONFERENCE SYSTEM AMPLIFIER		
01	Digital Signal Processor:- The DSP should have a 100 percentage Full Duplex Echo Cancelling - no attenuation during full-duplex. The system should be Automatic echo cancellation (AEC). The system should be Automatic Gain Control (AGC). The system should be Dynamic Noise reduction. The should have frequency response between 20 Hz - 20 KHz	Essential
02	The DSP should have USB port for integrating with Unified Software solutions like Skype, Lync, etc. DSP Should have dual capability of Local Sound Reinforcement and Far end Audio to be sent for Video conferencing at the same time without any Noise and Echo. Whatever teacher or student speaks through Collar or hand held microphone and Goosneck microphone all should be Going to Far end Location over Video Conference and also should come out of Speakers for local Sound Reinforcement so that everyone present in class can also hear clearly.	Essential
03	Microphone Features:- 2 no. of wireless Microphones should be supplied along with DSP from day one or more. The Microphone should have Frequency band of UHF 610MHz - 680MHz or better. The system should be Microphone Frequency Response- 80Hz-18KHz or better. The system should have the facilty to control the gain of microphone. The system should have LED indicator for status. Operating Range upto 100 Feet.	Essential
04	Amplifier Features: The system having inbuilt digital amplifier. The Amplifier should consist of a 200 Watts (100 Watts x 2) at 8 Ohms or more. The Amplifier should have S/N Ratio of > 80dB. The Amplifier should be inbuilt with DSP from day 1. Amplifier and DSP should come as single unit.	Essential
05	I/O Ports:- Built-In 1 x Handheld, 1 x headband Microphone Unbalanced MIC input (1x 6.5mm phono jack)with gain control Balanced 48v/12v phantom mic inputs (2x Phoenix ports) with separate gain controller Line input - 1 x 2RCA Line Output - 1 x 2RCA USB voice interface X 1 or more It should have 1 X RS232 port for controlling	Essential
06	Form Factor: The system should be standard 19 inches Rack Mountable or better. Certification: Proposed product must have CE, RoHS, FCC certification. Copy to be attached as proof.	Essential

Parameters for Technical Compliance

Sl.No.	Parameter	Essential / Desirable
65 INCH DISPLAY TV 4K		
01	Display Panel Diagonal size: 65 Inches Resolution: 3840 x 2160 (4K or Higher) Display Color: 1.07 Billion or Higher Brightness: 350cd/m2 (Min) & 500cd/m2(Max) Audio Output: 10W + 10W Speaker System: 2 CH	Essential
02	Display - Connectivity Ports: Front Interface: HDMI - 2 Ports, USB: 2 Ports Rear Interface:- USB 3.0 : 1 USB 2.0 : 1, HDMI IN : 2 VGA : 1 AUDIO IN : 1 RS232 : 1, RJ45 IN : 1, EARPHONE : 1 COAX: 1	Essential
03	Smart System (Android): Web OS 4.5 or more Web Browser Support Pre-loaded Apps Screen Share Bluetooth Audio Playback Mobile Connection Overlay Bluetooth/Wifi Support TV to Mobile Mirroring	Essential
04	Voltage: 220 V Power Consumption: 99.1 W, Stand By: 0.5 W Warranty: 2 Years or Higher.	Essential

Parameters for Technical Compliance

Sl.No.	Parameter	Essential / Desirable

65 INCH DIGITAL BOARD		
01	Panel: Diagonal size: 65 Type: Direct, 60Hz Resolution: 3,840 x 2,160 (Landscape) Brightness (Typ.): 390cd/m2 (Without glass) Contrast Ratio (Typ.): 1,200:1 Viewing Angle (H/V): 178:178 Response Time (G-to-G): 8ms Operation Hour: 16/7 Sound: Built in Speaker (12W x 2CH)	Essential
02	Connectivity: Input: RGB: 1 Video: HDMI 3 (Rear 2, Front 1), USB C (Front), OPS Audio: 1 (Stereo Mini Jack) USB: 5 (2.0 x 1, 3.0 x 4) Output: RGB: N/A Video: HDMI Out (Rear) Audio: 1 (Stereo Mini Jack) Touch Out: Touch Out 2 (Front 1, Rear 1) Internal Sensor: Eco Sensor ExternalControl:Touch Input, RS232C In/Out, RJ45 In/Out BT/Wi-Fi: Yes (Keyboard/Mouse)	Essential
03	Touch: Type: IR Drawing: 20 points touch Touch Pen Type: Passive Pen Object Recognition Range: 5mm/10mm/15mm Touch Response Time: <=10ms Drawing Speed (Touch latency): <=45ms Haze: 25% Thickness: 3.2T Hardness: Tempered Glass	Essential

04	Power:
	Type: Internal
	Power Supply: AC100-240V 50/60Hz
	Power Consumption: Max [W/h]: 385W
	           Typical [W/h]: 200W
	           Rating [W/h]: 350W
	        Stand-by [W/h]: 0.5
	             BTU [W/h]: 1,314
		Essential

05	Mechanical: Dimensions (MM): Set1488 × 897 × 88mm Package: 1,628 × 1,005 × 208mm Weight (kg): Set 34.8kg Package: 48.7kg Color: Space Gray VESA Mount:600 x 400 Protection Glass: Yes Stand Type: Wall Mount Media Player Option Type: OPS Slot support Rotation: Landscape only Power Cable: Length3m Accessory: Power Cord, Remote Controller, HDMI Cable, Touch Pen (2ea, Black), USB Cable, Warranty	Essential

Parameters for Technical Compliance

	Parameter	Essential / Desirable
CH DIGITAL BOARD		
06	Operation: Operating Temperature: 0-40 C Humidity: 10-80% Feature: Key: Android App Launcher Orientation: Landscape H/W: Touch Overlay (IR), Front Connectivity, OPS I/F Support (w/OPS Box), Eco Sensor, Wi-Fi/BT Module Inbox S/W: First Screen: Home UI (Multi Windows supported) Apps: Note app, Screeshare, Finder, Browser, etc WebRTC: Yes Screen Share: Yes	Essential
07	Internal Player (Embedded H/W) Processor: A55 x 4 RAM: 4 GB Storage: 32 GB Operating System: Android 11 (AOSP) Security: 802.1 x (WPA2 Enterprise): EAP-TLS, EAP-TTLS, EAP-PEAP	Essential
08	Accessories: Power Cord, Remote Controller, HDMI Cable, Touch Pen (2ea, Black), USB Cable, Warranty/QSG Optional: Stand/Mount: N / A (3rd party company stand/mount can be supported through VESA) OPS: Processor: Intel I5 RAM: 8 GB Storage:512 GB SSD	Essential
Common Technical Parameter for All Items		
01	OEM certificates to be provided for displays, audio video systems	Essential
02	The OEM/Vendor Should have direct technical support staff and office for immediate technical support	Essential
03	The OEM Must have valid ISO 9001:2015, ISO 45001:2018, ISO 27001:2022 and ISO 14001:2015 Certified Company.	Essential
04	The vendor should supply standard range of products.	Essential
05	Manufacturers Authorization Form (MAF)/Certificate with OEM details such as name, designation, address, e-mail Id and Phone No. required to be furnished along with the tender.	Essential
07	OEM authorization letter must be submitted along with the tender	Essential
08	Datasheet of the product(s) offered in the bid are to be uploaded along with the bid documents.	Essential
10	vendor should be in the audio/video conference Line of Business from at least last 1 year. Previous Supply Orders/Purchase Order/Gem Order for Video Conference Setup/Deployment should be attached along with the tender	Essential
11	vendor should provide sales support and spare support from the OEM.	Essential
13	The Components like conference system controller, DSP, Speakers, wireless microphones, displays should be from same OEM to ensure seamless integration. Required datasheets and OEM Authorization letters should be attached at the time of tender	Essential