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Organisation Chain :	Indian Institute of Management Sirmaur
Tender ID :	2026_IIMS_926274_1
Tender Ref No :	IIMS/PUR/AV EQUIPMENT/05/2026-27
Tender Title :	Supply, Installation, Testing and Commissioning Of Audio-Visual (AV) Equipment, Desktop Computers and O and M for the Classrooms in the Institute Campus
Corrigendum Type :	Other

Corrigendum Document Details

Corr.No.	Corrigendum Title	Corrigendum Description	Published Date	Document Name	Doc Size(in KB)
1	Corrigendum-IV	Pre-bid corrigendum	28-Oct-2026 02:13 PM	CorrigendumIV.pdf	7892.61
2	Corrigendum-I	Correction in page no 4 of original tender	22-Sep-2026 03:26 PM	CorrigendumI.pdf	568.66

IIMS/PUR/Corrigendum/2026-27/24

Date: 27.10.2026

Corrigendum-IV

Subject: Corrigendum against tender reference no. NIT No. IIMS/PUR/AV EQUIPMENT/05/2026-27 Dated. 16.09.2026.

It is hereby informed that the pre-bid meeting was held on 24.09.2026 at the IIM Sirmaur, Conference Hall, First Floor, Administrative Building to discuss the pre-bid queries raised by the participating bidders. Based on the queries received and the decisions taken by the concerned committee of the Institute, the following corrigendum is hereby issued:

TECHNICAL QUERIES					
Sr. No.	Chapter/Section No.	Page No(s).	Clause as per NIT	Bidder's Query	Response to Pre-bid Query/Revised Technical Specifications
A-1 Projector for Video projection	Section V - Scope of Work Point 3 - Technical Specifications	11 - 25	DLP LASER Projection system, Display technology DLP, Resolution 1080p, Full HD (1920x1080), Projection Regular Throw, 4K compatible, Brightness 5400 or more lumens or more Contrast ratio 2,00,000:1 or higher, Aspect ratio 4:3/16:9, Keystone correction - horizontal +/-20° or higher, Keystone correction - vertical +/-30° with vertical auto keystone correction., Screen size 1.02–7.62 m (40–300 in) or better, Light source type Laser, LASER life 30000 hours or higher, Throw ratio 1.4:1 ~ 2.24:1 or better, Projection distance 1m - 10m or better, Zoom 1.6 or better, Manual, Focal length	<ul style="list-style-type: none"> The technical specification of projector is proprietary & matching to single make, many makes mentioned in tender doesn't have any matching model, such as Christie, Barco, DPI etc. Many specifications, VGA in/out are obsoleted, should be deleted, even as mentioned all in one PC in tender also doesn't have VGA port, further lens ratio, 12v trigger, 24x7, IP rating for indoor projectors, need to be revisited to match the model of all mentioned makes in tender, in parity. For Item A-1, the requirement for vertical auto-keystone and a micro-USB service port may exclude projectors that provide equivalent geometry correction through 	DLP LASER Projection system, Display technology DLP, Resolution 1080p, Full HD (1920x1080), Projection Regular Throw, 4K compatible, Brightness 5400 or more lumens or more Contrast ratio 2,00,000:1 or higher, Aspect ratio 4:3/16:9, Keystone correction - horizontal +/-20° or higher, Keystone correction - vertical +/-30° with vertical auto keystone correction., Screen size 1.02–7.62 m (40–300 in) or better, Light source type Laser, LASER life 30000 hours or higher, Throw ratio 1.4:1 ~ 2.24:1 or better, Projection distance 1m - 10m or better, Zoom 1.6 or better, Manual, Focal length 0.91mm~32.62mm/0.823"~1.284/ f 21.5-43.0 mm, Lens shift Vertical +16% or higher,

		<p>0.91mm~32.62mm/0.823"~1.284/ f 21.5~43.0 mm, Lens shift Vertical +16% or higher, Connections Inputs 1 x HDMI 2.0, 1 x HDMI 1.4a, 1 x VGA, 1 x Audio 3.5mm, 1 x micro USB service, Outputs 1 x VGA, 1 x Audio 3.5mm, 1 x USB-A power 1.5A, Control 1 x RS232, 1 x RJ45, 1 x 12V trigger, IP rating IP6X, 24/7 operation, 360° operation, 4 Corner Correction, Watts per speaker 10W x 2, LAN – control Preferred Makes: Optima, NEC, Digital Projection, BARCO, Christie</p>	<p>manual/digital H/V keystone or four-corner adjustment and use standard USB or RS-232 service interfaces. Kindly allow such equivalent configurations while retaining the required projection performance.</p> <ul style="list-style-type: none"> • For Item A-1, the requirement for vertical auto-keystone and a micro-USB service port may exclude projectors that provide equivalent geometry correction through manual/digital H/V keystone or four-corner adjustment and use standard USB or RS-232 service interfaces. Kindly allow such equivalent configurations while retaining the required projection performance. • Mandating Active 5-Year BIS Registration in OEM Name for Video Projector: Under the Compulsory Registration Scheme (CRS) notified by the Ministry of Electronics and Information Technology (MeitY), Government of India, visual projection devices must mandatorily comply with statutory Indian safety standards (IS 13252 (Part 1) / IS/IEC 62368-1). To ensure that the institute receives high-reliability, proven, and continuously compliant hardware rather than untested, newly introduced, or short-lived white-labelled imports, the Projector OEM must demonstrate long-term regulatory compliance in the Indian market. Clarification/Amendment Sought: • Kindly incorporate the following mandatory quality condition for Item A-1: "The OEM of the quoted Projector must hold a valid Bureau of Indian Standards (BIS) Registration/License (under CRS Scheme) issued in the OEM's own name, which must be active and continuously maintained for at least the past five (05) years as on the bid issuance date. Furthermore, the exact model quoted by the bidder must be explicitly endorsed/included in the same BIS certificate. 	<p>Connections Inputs 1 x HDMI 2.0, 1 x HDMI 1.4a, 1 x VGA, 1 x Audio 3.5mm, 1 x -USB service, Outputs 1 x Audio 3.5mm, 1 x USB-A power 1.5A, Control 1 x RS232, 1 x RJ45, 1 x 12V trigger, IP rating IP6X, 24/7 operation, 360° operation, 4 Corner Correction, Watts per speaker 10W x 1, LAN – control.</p> <p>Preferred Makes: –NEC, Digital Projection, BARCO, Christie, Panasonic</p>
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			<ul style="list-style-type: none"> • Projector for Video Projection — Preferred Makes spelling may be corrected too "OPTOMA" and Not "Optima". • Most established DLP Laser Projector OEMs provide standard manual/digital horizontal and vertical keystone correction (along with 4-corner adjustment) and use standard Type-A/Type-B USB or RS-232 service interfaces rather than micro-USB. Requiring "vertical auto keystone" and "micro USB service" restricts leading projector OEMs. Kindly remove the mandatory requirement for "vertical auto keystone" and "micro-USB service port", allowing standard H/V keystone / 4-corner geometry correction with standard USB/service ports. • Request to: <ul style="list-style-type: none"> a. Request to remove IP6X. b. Micro USB – No c. Speaker- 10-watt x 1 d. Add BenQ Brand e. Kindly change Laser Life to min 20000 hours as per industry standard. 	
A-2 Motorised Screen		8' x 6' Motorised screen	The screen aspect ratio should be matching to projector i.e 16:9/16:10 , need to changed	Bidder to quote screen with 8' feet width and height of aspect ratio matching the projector
A-3 32inch Confidence monitor		32inch confidence monitor. shall support 1366x768 or better resolution. Brightness 300 nits or better. Minimum 16/7 support. 2xHDMI input. Preferred Make: LG/Samsung/Sony		32inch confidence monitor. shall support 1366x768 or better resolution. Brightness 300 nits or better. Minimum 16/7 support. 2xHDMI input. Preferred Make: LG/Samsung/Sony
A-4 Ceiling Speaker		Min 6.5" (6.5" LF + 1" HF) two-way coaxial thin edge ceiling loudspeaker, 100V transformer power taps: Conical dispersion: 150° or more, impedance: 8, low impedance RMS continuous power: 30 watts or more, frequency response: 60 Hz - 20 KHz or better, Max SPL(W/m): 103 dB or better, Sensitivity: 88 dB or better etc. CE Certification. Preferred Make: Audac/Bose/Tannoy	<ul style="list-style-type: none"> • Min 6.5" (6.5" LF + 0.75" HF) two-way coaxial thin edge ceiling loudspeaker. Conical dispersion: 110° or more, frequency response/range: 65 Hz - 20 KHz or better • Requested Amendment: <ol style="list-style-type: none"> 1) Dispersion Angle: 110 Degree 2) Freq Response – 80Hz – 20KHz 3) Preferred Make: Audac/Bose/Tannoy/Bosch Electro-voice 	Min 6.5" (6.5" LF + 1" HF) two-way coaxial ceiling loudspeaker, 100V transformer power taps: Conical dispersion: 140° or more, impedance: 8, low impedance RMS continuous power: 30 watts or more, frequency response: 90 Hz - 20 KHz or better, Max SPL(W/m): 103 dB or better, Sensitivity: 88 dB or better etc. CE Certification or their Indian counterparts.

			<ul style="list-style-type: none"> The given spec is proprietary and matches only with AUDAC- CIRA 724, You are requested to make the spec generic to allow fair competition. 	Preferred Make: Bose/Tannoy/Bosch/Electro Voice (EV)
A-5 Amplifier for Ceiling Speakers		<p>Octo channel 4 Ohm energy-efficient amplifier - 8 x 30W (This functionality maybe achieved with 2nos 4 channel amplifier or 4nos 2 channel amplifier) - 70/100V or 4 Ohms, Class-D amplifier technology, Energy star certified, Signal/Noise > 95 dB, THD+N (@ 1 kHz) < 0.1% (1/8 rated Power), Crosstalk (@ 1 kHz) < 70 dB, Frequency Response (± 3 dB) 110 Hz - 20 kHz, Technology Class-D, Protection DC Short circuit, Overheating, Over load, Signal limiting, Cooling Convection cooled, CE Certification or more. Preferred Make: Audac/Bose/Powersoft/Extron</p>	<ul style="list-style-type: none"> Octo channel 4 Ohm energy-efficient amplifier - 8 x 30W (This functionality may be achieved with 2 nos. 4-channel amplifiers or 4 nos. 2-channel amplifiers) - 70/100V or 4 Ohms, Class-D amplifier technology, Energy Star certified, Signal/Noise > 95 dB, THD+N (@ 1 kHz) < 0.1% (1/8 rated power), Crosstalk (@ 1 kHz) < 70 dB, Frequency Response (±3 dB) 110 Hz - 20 kHz, Technology Class-D, Protection: DC short circuit, overheating, overload, signal limiting or similar as per OEM. convection cooled, CE Certification or better. The given spec is proprietary and matches only with AUDAC- CEP 803, You are requested to make the spec generic to allow fair competition Energy Star certification is not uniformly available for professional multi-channel audio amplifiers. Kindly consider accepting Class-D amplifiers that meet the specified performance parameters and applicable CE/IEC/RoHS requirements, without making Energy Star certification mandatory. Energy Star is a voluntary US EPA program not universally adopted across professional multi-channel commercial audio power amplifiers, nor is it a statutory requirement under Indian norms (BEE). Mandating it restricts leading professional audio OEMs. Kindly remove the requirement for "Energy Star certified" and permit CE/IEC/RoHS compliant Class-D power amplifiers. 	<p>Octo channel 4 Ohm energy-efficient amplifier - 8 x 30W (This functionality maybe achieved with 2nos 4 channel amplifier or 4nos 2 channel amplifier) - 70/100V or 4 Ohms, Class-D amplifier technology, Energy star certified, Signal/Noise > 95 dB, THD+N (@ 1 kHz) < 0.1% (1/8 rated Power), Crosstalk (@ 1 kHz) < 70 dB, Frequency Response (± 3 dB) 110 Hz - 20 kHz, Technology Class-D, Protection DC Short circuit, Overheating, Over load, Signal limiting, Cooling Convection cooled, CE Certification or their Indian counterparts.</p> <p>Preferred Make: Bose, Tannoy, Bosch Electro Voice (EV)</p>
A-6 Pre-Amplifier		<p>Preamplifier with min 2 or more Balanced Microphone inputs, 1 or more Stereo Balanced Line, 3 or more Stereo Unbalanced Line, Bluetooth receiver, 3.5mm input Jack, Priority mute contact,</p>	<ul style="list-style-type: none"> The mentioned specification are proprietary & matching to single model only, please provide more choices , also Bluetooth should be deleted.Also expandable port should be 	<p>Preamplifier with min 2 or more Balanced Microphone inputs, 1 or more Stereo Balanced Line, 3 or more Stereo Unbalanced Line, Bluetooth receiver, 3.5mm input Jack, Priority mute contact, 1 or more Balanced</p>

		<p>1 or more Balanced Stereo outputs/ The preamplifier shall have the capability for expansion of inputs through addition of wallplates.</p> <p>Preferred Make: Audac/Parasound/Classe</p>	<p>allowed with fix/expansion port. Numbers of port required should be clarified.</p> <ul style="list-style-type: none"> • Modular card-based/fixed-based Digital Signal Processor with minimum 6 inputs and 12 outputs. All inputs shall have AEC feature, Optional 2 GPIO ports for logic controls, 64×64 or more bi-directional channels of audio over Dante/AES67/Similar or supported by the quoted Microphone, 2×2 USB ports for connectivity with software-based video conferencing systems (within the system without any external device), THD+N (22 Hz to 20 kHz): 0.002% or better (1 kHz @ +4 dBu) or similar, Dynamic Range: 109 dB or better, Propagation Delay: 4 ms or better, Sampling Rate: 48 kHz, A/D-D/A Converters: 24-bit or better, Operating Temperature: at least 0-40°C or better, Processor Type: 32-bit floating point or better, Phantom Power: +48VDC, Display(s): Single OLED display at front of device or as per the OEM, Factory service micro-USB/LAN. The programming should be open architecture. The device should be 19" rack mountable with no more than 1U. Compliances: CE, FCC, RoHS. • The given spec is proprietary and matches only with AUDAC- PRE220, You are requested to make the spec generic to allow fair competition. 	<p>Stereo outputs. The preamplifier shall have the capability for 1 No expansion port required for future use, maybe added through addition of wall plates.</p> <p>Preferred Make: Parasound/Classe/Yamaha/Extron</p>
A-7 Microphone with lavalier mic		<p>Wireless microphone system which includes transceiver and 1 unit of body pack transmitter. Body pack transmitter should have inbuilt omnidirectional mic having frequency response 20 Hz – 20 kHz. System operating in the 1880–1900 MHz frequency range with a dynamic range of 110 dB or better and a range of 45-50 meters. It should offer less than 0.03% total harmonic distortion (THD) and 24-bit/48 kHz digital audio processing. Audio networking is supported via Dante and AES67, with</p>	<ul style="list-style-type: none"> • Kindly confirm whether battery runtime of ≥ 12 hours under normal operating conditions shall be accepted. • Kindly confirm whether transmitter mute indication and battery status indication shall be sufficient, and the requirements for RF range display and battery indication in hours/minutes may be relaxed. • Kindly confirm whether same OEM external charging stations/chargers shall be accepted in lieu of integrated charging docks. • Kindly confirm whether an external omnidirectional lavalier microphone 	<p>Wireless microphone system which includes transceiver and 1 unit of body pack transmitter. Body pack transmitter should have inbuilt omnidirectional mic having frequency response 20 Hz – 20 kHz. System operating in the 1880–1900 MHz frequency range with a dynamic range of 110 dB or better and a range of 45-50 meters. It should offer less than 0.03% total harmonic distortion (THD) and 24-bit/48 kHz digital audio processing. Audio networking is supported via Dante and AES67, with AES 256-bit encryption for secure transmission and a</p>

		<p>AES 256-bit encryption for secure transmission and a latency of 19 ms – 25 ms. The system should support up to two simultaneous transmitters (handheld, bodypack and boundary) and should automatically scan and assign frequencies while avoiding RF interference. The transceiver should include integrated charging docks compatible with handheld, bodypack and boundary transmitters, with battery runtimes of at least 16 hours for bodypack or if battery run time is 8hr – 10 hours, then consider additional two batteries as per IIMS requirement. Internal or external charger must charge mentioned microphone or its battery. If the system doesn't have access point transmitter, then APT must be provided as external. Transmitters feature: mute/unmute buttons and display indicating mute status, RF range and battery life in hours and minutes. The receiver should support both Dante and analog audio interfacing for integration with modern or legacy systems and should include a compact 5x5 audio mixer with Dante (If internal mixer is not there, provide external 6 channel mixer which supports DANTE), analog and USB audio I/O. It should also feature Acoustic Echo Cancellation (AEC), Noise Reduction (NR), Automatic Gain Control (AGC) and Parametric EQ (PEQ) or if system doesn't have in-built DSP, please provide external 8In x 8Out DSP with all these features for optimal audio performance. A web-based GUI is preferred for configuration and should be certified to work with Industry Standard Video conferencing solutions i.e. Microsoft Team & Zoom. Preferred Make: Sennheiser/ClockAudio/Shure</p>	<p>supplied along with the bodypack transmitter from the same OEM shall be considered compliant.</p> <ul style="list-style-type: none"> • Kindly confirm acceptance of a wireless microphone system having THD $\leq 0.1\%$ • The requirement for Dante/AES67 networking and a built-in compact 5x5 Dante mixer in the wireless microphone receiver appears to be restrictive and aligned with a proprietary single-brand architecture, thereby limiting participation by other reputed OEMs. For standard classroom applications, wireless microphone receiver audio can be routed to the amplifier/mixer through balanced line outputs without requiring networked audio or an internal mixer. Kindly remove or make optional the requirements for Dante, AES67, and the built-in 5x5 mixer, and permit equivalent solutions meeting the required functional and audio-performance parameters. Further, in accordance with the Government of India's Make in India / local-content procurement preference policy, kindly ensure that eligible Class-I/Class-II local suppliers and Indian OEMs offering compliant or superior solutions are given applicable preference and are not excluded by proprietary brand-specific specifications. <p>Preferred Makes: Sennheiser/Clock/Shure/Bosch Electro voice</p> <ul style="list-style-type: none"> • Specifying a built-in "compact 5x5 audio mixer with Dante" directly into a wireless mic receiver point uniquely to a proprietary single-brand architecture, shutting out other globally reputed wireless microphone OEMs. For normal classrooms, audio from wireless receivers' routes directly to the amplifier/mixer via balanced line outputs. Kindly remove the proprietary requirement for Dante, AES67, and the built-in 5x5 mixer 	<p>latency of 19 ms – 25 ms. The system should support up to two simultaneous transmitters (handheld, bodypack and boundary) and should automatically scan and assign frequencies while avoiding RF interference. The transceiver should include integrated charging docks compatible with handheld, bodypack and boundary transmitters, with battery runtimes of at least 16 hours for bodypack or if battery run time is 8hr – 10 hours, then consider additional two batteries as per IIMS requirement. Internal or external charger must charge mentioned microphone or its battery. If the system doesn't have access point transmitter, then APT must be provided as external. Transmitters feature: mute/unmute buttons and display indicating mute status, RF range and battery life in hours and minutes. The receiver should support both Dante and analog audio interfacing for integration with modern or legacy systems and should include a compact 5x5 audio mixer with Dante (If internal mixer is not there, provide external 6 channel mixer which supports DANTE), analog and USB audio I/O. It should also feature Acoustic Echo Cancellation (AEC), Noise Reduction (NR), Automatic Gain Control (AGC) and Parametric EQ (PEQ) or if system doesn't have in-built DSP, please provide external 8In x 8Out DSP with all these features for optimal audio performance. A web-based GUI is preferred for configuration and should be certified to work with Industry Standard Video conferencing solutions i.e. Microsoft Team & Zoom.</p> <p>Preferred Makes: Sennheiser/ClockAudio/Shure/Bosch -EV</p>
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				to generalize the specification for vendor neutrality.	
A-8 HDMI Transmitter			Transmitter over Cat 6 (HDBaseT) up to 70m with Input 1 HDMI, Cat6 (HDBaseT) Output, 4K@60 4:4:4, HDCP 2.2 Compliant, with CEC, IR and RS-232, Compliance : CE, etc complete as required. Preferred Make: Lightware/ Kramer/ RGB Spectrum	<ul style="list-style-type: none"> The current specification mentions a transmission distance of 70 metres. We respectfully request the Institute to kindly amend this requirement to 60 metres. We would like to highlight that the proposed amendment is based on the actual application requirement of the project. The equipment is intended for classroom applications and not auditorium or large-hall applications. Request to please add "Crestron" in approved makes list Request to please add "Cypress Technology" in approved makes list 	Transmitter over Cat 6 (HDBaseT) up to 60m with Input 1 HDMI, Cat6 (HDBaseT) Output, 4K@60 4:4:4, HDCP 2.2 Compliant, with CEC, IR and RS-232, Compliance: CE, etc complete as required. Preferred Make:Lightware/Kramer/RGB Spectrum/Crestron
A-9 HDMI Receiver			HDMI Receiver over Cat 6 (HDBaseT) up to 70m with Input 1 Cat6 (HDBaseT), 1 HDMI Output, 1080p, 2K and 4K@60 4:4:4, HDCP 2.2 Compliant, with IR and RS-232, Compliance: CE, etc complete as required. Preferred Make: Lightware/ Kramer/ RGB Spectrum	Request to please add "Cypress Technology" in approved makes list	HDMI Receiver over Cat 6 (HDBaseT) up to 60m with Input 1 Cat6 (HDBaseT), 1 HDMI Output, 1080p, 2K and 4K@60 4:4:4, HDCP 2.2 Compliant, with IR and RS-232, Compliance: CE, etc complete as required. Preferred Make: Lightware/ Kramer/ RGB Spectrum/ Crestron
A-10 Wireless presentation			Wireless presentation & Video conferencing devices supporting video resolution up to 4K, with 1 HDMI & 1 Display Port output, 1 Ethernet port, 4 USB port for connecting keyboard, mouse, USB camera, USB mics, etc, Supports iOS, Windows and Android operating systems, display minimum 6 users screen with 1 display & 12 users screen using 2 displays, Support for DHCP, Audio out, support for annotation & whiteboard feature, content should be visible on connected smartphones, iPhone, iPad, Laptops, MacBooks & at the same time users should be able to zoom the content for clarity & do annotation from their devices. User should be allowed to install any third-	<ul style="list-style-type: none"> Request to please add "Crestron" in approved makes list Current specification is highly proprietary, and only the Kramer VIA Campus² PLUS appears to comply. To encourage fair competition and allow participation from multiple OEMs, we request that the specification be revised as follows: "Minimum 1 HDMI or 1 DisplayPort output, supporting display of at least four user screens simultaneously." 3 USB port for connecting keyboard, mouse, USB camera, USB mics" This revision will help ensure a more open and competitive specification while meeting the functional requirement. Current specification is highly proprietary, and only the Kramer VIA Campus² PLUS 	Wireless presentation & Video conferencing devices supporting video resolution up to 4K, with min 2 outputs (HDMI or DP in any combination is required)), 1 Ethernet port, 3 or more USB port for connecting keyboard, mouse, USB camera, USB mics, etc, Supports iOS, Windows and Android operating systems, display for minimum 6 users screen with 1 display & 12 users screen using 2 displays, Support for DHCP, Audio out, support for annotation & whiteboard feature, content should be watched on connected smartphones, iPhone, iPad, Laptops, MacBooks & at the same time users can zoom the content for clarity & do annotation from their devices. User should be allowed to install any third-party application on the device like MS Teams/Zoom/Blue Zeans/Any

		<p>party application on the device like MS Teams/Zoom/Blue Zean's/Any soft VC App. Device should allow using it for soft VC application, connect 252 participants simultaneously, Certification: CE, or their Indian counterparts etc. Preferred Make: Mersive/ Kramer/ Barco</p>	<p>appears to comply. To encourage broader competition and enable participation from multiple OEMs, we request that these parameters be removed.</p> <ul style="list-style-type: none"> Removing these restrictive requirements will allow at least three OEMs to qualify while maintaining the intended functionality and ensuring a fair and competitive procurement process. 	<p>soft VC App. Device can be used for soft VC application, connect 252 participants simultaneously, Certification: CE or their Indian counterparts. Preferred Make: Mersive/Kramer/Barco/Crestron</p>
A-11 Control System		<p>Control System, Hardware Platform with 1 Instance, Ports 3 USB: On 2 USB 3.0 connectors and 1 USB connector, 1 LAN: On an RJ-45 connector, Inputs 1 HDMI: On a female HDMI connector, Outputs 1 HDMI: On a female HDMI connector, General Processor: Intel Gemini Lake QC SOC, Main Memory: 4GB LPDDR4 (2400), Storage: 32GB eMMC, Networking: 1 x Gigabit LAN Wi-Fi 802.11 ac/b/g/n dual band, VESA mount. CE Certification or their Indian counterparts. Preferred Make: Extron/ Kramer/QSC</p>	<ul style="list-style-type: none"> Current specification is highly proprietary, and only the Kramer KC-VirtualBrain1 appears to comply. To encourage fair competition and allow participation from multiple OEMs, we request that the specification be revised as follows: "AV Control System with a minimum of 2x RS-232, 4x IR, 4x Relay, 4x I/O, 1x LAN port, 1 GB RAM, and 8 GB Flash storage. Support for both IPv4 and IPv6 over Ethernet. CE compliant. The Control System and Touch Panel shall not require an internet connection for configuration, deployment, or programming." This revision will maintain the required functionality while enabling at least three OEMs to qualify, ensuring a more open and competitive bidding process. Request to please add "Crestron" in approved makes list Software of Hardware based control system with to control the devices via Ethernet, Serial, IR and GPIO ports. The control system should not have any limitation in no of devices to be controlled via any no of Wired, Wireless (iOS, Android or Windows) touch screen panels. 	<p>Control System, Hardware Platform with 1 Instance, Ports 3 USB: On 2 USB 3.0 connectors and 1 USB connector, 1 LAN: On an RJ-45 connector, General Processor: Intel Gemini Lake QC SOC/ Equivalent in AMD, Main Memory: 4GB LPDDR4 (2400), Storage: 32GB eMMC, Networking: 1 x Gigabit LAN Wi-Fi 802.11 ac/b/g/n dual band, VESA mount. CE Certification or their Indian counterparts. Preferred Make: Extron/ Kramer/QSC/ Crestron</p>
A-12 Touch screen panel		<p>8-inch IPS colour screen Touch panel, screen resolution 1280 X 800, brightness 350cd/m2, contrast ratio 1000:1, 16:10 aspect ratio, $\pm 80^\circ$ horizontal and vertical wide viewing angles, ambient light sensor, proximity sensor. Should have</p>	<ul style="list-style-type: none"> Request to please add "Crestron" in approved makes list Current specification is highly proprietary, and only the Kramer KT-208 appears to comply. To promote fair competition and enable participation from multiple OEMs, 	<p>7-inch or better IPS/TFT color screen Touch panel, screen resolution 1280 X 800, brightness 350cd/m2, contrast ratio 850:1, 16:10 aspect ratio, $\pm 80^\circ$ horizontal and vertical wide viewing angles, ambient light sensor, proximity sensor. Should have inbuilt</p>

		<p>inbuilt Wi-Fi 6, 802.11 a/b/g/n/ax/ax & Bluetooth 5.0, Ethernet : 10/100/1000 Mbps LAN, capacitive multi touch technology, multi-touch points and 2-finger gesture capabilities., System Memory: 4GB LPDDR4, Internal Storage Memory: 32GB eMMC, support for video formats H.264/H.265,VC-1, MPEG-4, VP9/VP8, Support for Image Codecs: JPEG, BMP, GIF, PNG, Should have front 5MP FF camera, Customizable GUI using same OEM GUI Software, Power over Ethernet (PoE) 802.3af Certification: CE, FCC, UL, RoHs, WEEE or their Indian counterparts.</p> <p>Preferred Make: Extron/ Kramer/QSC</p>	<p>we request that the specification be revised as follows: 8-inch IPS/TFT colour screen Touch panel, screen resolution 1280 X 800, brightness 350cd/m2, contrast ratio 1000:1, 16:10, aspect ratio, ±80° horizontal and vertical wide viewing angles, ambient light sensor, proximity sensor. Should have inbuilt Wi-Fi 6, 802.11 a/b/g/n/ax/ax & B Bluetooth 5 .0, Ethernet: 10/100/1000 Mbps LAN, capacitive multi touch technology, multi-touch points, System Memory: 4GB LPDDR4, Internal Storage Memory: 32GB eMMC, support for video formats, H.264/H.265, Customizable GUI using same OEM GUI Software, Power over Ethernet (PoE) 802.3af Certification: CE, FCC, UL, RoHs, WEEE." This revision preserves the functional requirements while allowing at least three OEMs to qualify, ensuring a more open and competitive procurement process.</p> <ul style="list-style-type: none"> • 7/8-inch capacitive touch screen control panel with a minimum resolution of 1280x800, brightness of 350 cd/m², contrast ratio of 850:1, and 16:10 aspect ratio. The panel should include an ambient light sensor and proximity sensor. Ethernet: 10/100/1000 Mbps LAN, capacitive multi touch technology, Customizable GUI using same OEM GUI Software, Power over Ethernet (PoE) 802.3af Certification: CE, FCC, UL, RoHs, WEEE. 	<p>Wi-Fi 6, 802.11 a/b/g/n/ax/ax & Bluetooth 5.0, Ethernet : 10/100/1000 Mbps LAN, capacitive multi touch technology, multi-touch points and 2-finger gesture capabilities., System Memory: 4GB LPDDR4, Internal Storage Memory: 32GB eMMC, support for video formats H.264/H.265,VC-1, MPEG-4, VP9/VP8, Support for Image Codecs: JPEG, BMP, GIF, PNG, Should have front 5MP FF camera, Customizable GUI using same OEM GUI Software, Power over Ethernet (PoE) 802.3af Certification: CE, FCC, UL, RoHs, WEEE or their Indian counterparts.</p> <p>Preferred Make: Extron/Kramer/QSC/Crestron</p>
A-13 HDMI Matrix Switcher		<p>4K@60Hz 4:4:4 4X4 HDMI Matrix Switcher, 4 HDMI inputs, 4 HDMI Outputs, audio embedding for each HDMI inputs & audio de-embedding for each HDMI output, 4 balanced audio stereo audio outputs & 4 S/PDIF output on female RCA connectors, 2K and 4K support, HDCP 2.2 Compliant, data rate</p>	<ul style="list-style-type: none"> • Request to please add "Crestron" in approved makes list • Request to please add "Cypress Technology" in approved makes list • Current specification is highly proprietary, and only the Kramer VS-44H2A appears to comply. To encourage broader competition and enable participation from multiple 	<p>4K@60Hz 4:4:4 4X4 HDMI Matrix Switcher, 4 HDMI inputs, 4 HDMI Outputs, audio embedding for each HDMI inputs & audio de-embedding for each HDMI output, 4 balanced audio stereo audio outputs & 4 S/PDIF output on female RCA connectors, 2K and 4K support, HDCP 2.2 Compliant, data rate 18Gbps, 4 Preset configurations, Support for</p>

		18Gbps, 4 Preset configurations, Support for HDR10, xvYCC colour, Dolby TureHD/DTS–HD Master Audio, 3D Video, Controllable through Ethernet and RS-232, Certification: CE, or their Indian counterparts. etc complete as required. Preferred Make: Lightware/Kramer/ RGB Spectrum	<p>OEMs, we request that the specification be revised as follows:</p> <ul style="list-style-type: none"> "Audio de-embedding from HDMI inputs and/or HDMI outputs with a minimum of 2 balanced stereo audio outputs." This revision maintains the functional requirement while allowing at least three OEMs to qualify, ensuring a more open and competitive procurement process. 	<p>HDR10, xvYCC color, Dolby TureHD/DTS–HD Master Audio, 3D Video, Controllable through Ethernet and RS-232, Certification: CE, or their Indian counterparts etc complete as required.</p> <p>Preferred Make: Lightware/Kramer/RGB Spectrum/Cypress</p>
A-14 Table		Wooden/Digital Interactive Podium, 4X2 Feet Wooden Top with Motorized Tilting of the Interactive Panel, with provision to install Gooseneck Microphone, Interactive panel, Keyboard Tray and space to store AV equipment and PC. The Podium should be table type having cable manager with power socket, USB, VGA, HDMI and CAT 6 etc. The same should be made from 18mm FR Plywood of ISI mark and design should be approved by IIMS before supply. Podium should be supplied with Wacom tablet 15inch or higher. Preferred Make: Custom	<ul style="list-style-type: none"> The podium specification names a Wacom tablet. Kindly replace this with a performance-based requirement for a reputed interactive pen display/tablet of at least 15 inches, including equivalent makes. Alternatively, please consider identifying the tablet as a separate BOQ item to make warranty and evaluation responsibilities unambiguous. Specifically naming the proprietary brand "Wacom" violates GFR Rule 173 regarding generic specifications. Furthermore, bundling specialized interactive pen display hardware inside custom wooden furniture creates warranty and technical evaluation ambiguities. Kindly remove the brand name "Wacom" and allow any reputed interactive pen display/tablet of 15" or higher (e.g., Wacom/XP-Pen/Huion/ViewSonic or equivalent), or list the interactive display tablet as a separate BOQ line item. 	Wooden/Digital Interactive Podium, 4X2 Feet Wooden Top with Motorized Tilting of the Interactive Panel, Height - 2.5 ft with provision to install Gooseneck Microphone, Interactive panel, Keyboard Tray and space to store AV equipment and PC. The Podium should be table type having cable manager with power socket, USB, VGA, HDMI and CAT 6 etc. The same should be made from 18mm FR Plywood of ISI mark and design should be approved by IIMS before supply. Podium should be supplied with Interactive tablet with 16" or more active area, WQXGA or better resolution, 260cd/m2 or better brightness, 8192 pen pressure levels, 20-degree tilt integration stand, Connectivity: Type-C, Mini HDMI, USB Type A, anti-Glare glass, 12ms or lower response time, it should have a battery free pen with eraser.
A-15 HDMI DA		1x2 HDMI Distribution amplifier. Max. Data Rate — 6.75Gbps (2.25Gbps per graphic channel). It shall be HDTV Compatible and HDCP Compliant. HDMI Support — Deep Colour, x.v.Colour, Lip Sync, CEC. 3D Pass-Through. EDID Pass-through. Preferred Make: Lightware/ Kramer/ RGB Spectrum	<ul style="list-style-type: none"> Request to please add "4K 60 4:4:4 resolution support" as mentioned for switcher, Transmitter & Receivers. Request to please add "Crestron" in approved makes list Request to please add "Cypress Technology" in approved makes list 	<p>1x2 HDMI Distribution amplifier. Max. Data Rate — 6.75Gbps (2.25Gbps per graphic channel). It shall be HDTV Compatible and HDCP Compliant. HDMI Support — Deep Color, x.v.Colour, Lip Sync, CEC. 3D Pass-Through. EDID Pass-through.</p> <p>Preferred Make: Lightware/ Kramer/ RGB Spectrum/Crestron/Extron</p>
A-16 N/W Switch		24-port network switch with switching capacity of 56Gbps. Standard 802.1d Spanning Tree support. Support for IEEE		24-port network switch with switching capacity of 56Gbps. Standard 802.1d Spanning Tree support. Support for IEEE



			802.3ad Link Aggregation Control Protocol. Support for up to 4094 VLANs simultaneously. Should support 2000 multicast groups. Preferred Make: Cisco/Alcatel/HP/Netgear		802.3ad Link Aggregation Control Protocol. Support for up to 4094 VLANs simultaneously. Should support 2000 multicast groups. Preferred Make: Cisco/Alcatel/HP/Netgear
A-17 Racks Cable and Connectors			Racks of appropriate size, Cable and Connectors as per the site requirement.		Racks of appropriate size, Cable and Connectors as per the site requirement.
B-1 98inch 4K Display			LED Display with Screen Size (diagonal): 98 inch. Brightness (cd/m ²) Typical: 400 nits or higher. Contrast Ratio (Native): 1200/5000:1 or higher. Display resolution (H x V pixels): 4K UHD (3840 * 2160). Response time: 7 ms or less. Backlight type: Direct (Full Array LED). Operation time: 24x7. Viewing Angle (Right/Left/Up/Down): 178 degrees. Dimming type: Local Dimming. Operating System (Built in): Android. HDR Compatibility: HDR10, HLG, Dolby Vision. On-board Storage (GB): 32 GB or more. Colour gamut (DCI-P3): 95% or higher. Wi-Fi Direct, Wi-Fi Enabled & Wireless and Wired LAN. Chromecast/Miracast & Apple AirPlay (built in). HDCP: HDCP 2.3. Ports and Connectivity: HDMI (3) or more, Digital Audio Out (1), USB (2), Ethernet (1). Preferred Make: Sony/LG/Samsung	<ul style="list-style-type: none"> LED Display with Screen Size (diagonal): 98 inch. Brightness (cd/m²) Typical: 400 nits or higher. Contrast Ratio (Native): 1200/5000:1 or higher. Display resolution (H x V pixels): 4K UHD (3840 * 2160). Response time: 7 ms or less. Backlight type: Direct (Full Array LED). Operation time: 24x7. Viewing Angle (Right/Left/Up/Down): 178 degrees. Dimming type: Local Dimming. Operating System (Built in): Android. HDR Compatibility: HDR10, HLG, Dolby Vision. On-board Storage (GB): 32 GB or more. Colour gamut (DCI-P3): 95% or higher. Wi-Fi Direct, Wi-Fi Enabled & Wireless and Wired LAN. Chromecast/Miracast & Apple AirPlay (built in). HDCP: HDCP 2.3. Ports and Connectivity: HDMI (3) or more, Digital Audio Out (1), LISB (2), Ethernet Preferred Make: Sony/LG/Samsung Modifications requested: Screen Size: 98-inch, Resolution: 4K UHD (3840 × 2160), Brightness: 400 nits or higher, Contrast Ratio: 1200:1 or higher, Viewing Angle: 178° (H/V), Operation Time: 24x7. Operating System: Commercial Grade OEM owned Embedded OS (webOS/Android/Tizen or equivalent), HDR Support: HDR10 or equivalent, Internal Storage: 8 GB or higher, Colour Gamut: OEM Standard for Professional Signage Applications, Backlight Technology: LED Backlight, Wireless 	LED Display with Screen Size (diagonal): 98 inch. Brightness (cd/m ²) Typical: 400 nits or higher. Contrast Ratio (Native): 1200/5000:1 or higher. Display resolution (H x V pixels): 4K UHD (3840 * 2160). Response time: 8 ms or less. Backlight type: Direct (Full Array LED). Operation time: 24x7. Viewing Angle (Right/Left/Up/Down): 178 degrees. Dimming type: Local Dimming. Operating System (Built in): Android. HDR Compatibility: HDR10, HLG, Dolby Vision. On-board Storage (GB): 32 GB or more. Colour gamut (DCI-P3): 95% or higher. Wi-Fi Direct, Wi-Fi Enabled & Wireless and Wired LAN. Chromecast/Miracast & Apple AirPlay (built in). HDCP: HDCP 2.3. Ports and Connectivity: HDMI (3) or more, Digital Audio Out (1), USB (2), Ethernet (1). Preferred Make: Sony/LG/Samsung/Panasonic



				<p>Connectivity: Wi-Fi & LAN, Screen Sharing: Miracast, or equivalent, HDCP: HDCP 2.2 or higher, Connectivity: HDMI (3 or more), USB (2 or more), Audio Out, LAN.</p> <ul style="list-style-type: none"> • Response Time specification be increased to 10ms (which is a leading industry standard) from the current 7ms , which is only present in the model of 1 of the Preferred Makes • Remove specification of "HDR Compatibility: HDR10, HLG, Dolby Vision" as they are part of consumer/ retail TV specifications, and NOT of Professional Displays, nor will it be required in an educational Institute setup where displays are Not being used for Entertainment purpose but for showing static & simple video content in the classrooms. • Color gamut specification be relaxed to leading industry standard of "DCI-P3 85% / 72% NTSC" from the current "DCI-P3 95%" as they are part of consumer/ retail TV specifications, and NOT of Professional Displays, nor will it be required in an educational Institute setup where displays are Not being used for Entertainment purpose but for showing static & simple video content in the classrooms. • Request to include "OPTOMA" as one of the Preferred Makes since this brand is a Preferred Make in Projector and Smart Board product in this tender, and OPTOMA is also a reputed brand that has Equivalent 98-inch 4K Display as the rest of the preferred brands. • Preferred Make: Sony/LG/Samsung or Equivalent. • Response Time specification be increased to 10ms (which is a leading industry standard) from the current 7ms , which is only present in the model of 1 of the 	
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				<p>Preferred Makes). Remove specification of "HDR Compatibility: HDR10, HLG, Dolby Vision" as they are part of consumer/ retail TV specifications, and NOT of Professional Displays, nor will it be required in an educational Institute setup where displays are Not being used for Entertainment purpose but for showing static & simple video content in the classrooms. Colour gamut specification be relaxed to leading industry standard of "DCI-P3 85% / 72% NTSC" from the current "DCI-P3 95%" as they are part of consumer/ retail TV specifications, and NOT of Professional Displays, nor will it be required in an educational Institute setup where displays are Not being used for Entertainment purpose but for showing static & simple video content in the classrooms.</p> <ul style="list-style-type: none"> • We kindly request the department to amend the technical specifications as follows: Duty Cycle: Change from 24x7 to 18x7, as an 18-hour daily operating cycle is adequate for typical government department requirements. Ports: Kindly generalize the port specifications instead of a specifying a particular port type or configuration, to allow participation from technically compliant products with equivalent functionality. These amendments will enable wider participation from reputed OEMs while meeting the functional requirements of the department. • We kindly the request the department to remove the specific brand name mentioned in the tender specification and make the requirement brand neutral. Alternatively, BenQ may also be induced to ensure wider participation and fair competition among reputed OEM's. 	
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B-2 Smart Board		<p>Interactive flat panel display shall be an 86-inch 4K UHD system (3840 × 2160) featuring a VA or equivalent panel with D-LED backlighting, delivering a minimum brightness of 450 or more cd/m², contrast ratio of 16,000:1 or better, 178° viewing angles and a response time of 6 ms or better with a minimum panel life of 50,000 hours or more. The front glass shall be minimum 3 mm or more toughened glass with 9H Mohs hardness, incorporating anti-glare and anti-fingerprint coating and be suitable for 16×7 continuous operation. Integrated audio shall include dual built-in speakers of at least 20 W each and a built-in microphone array. Multi-touch capability of up to 40 touch points on Android or better, with a touch response time of ≤ 2 ms, writing accuracy of < 1 mm and minimum object size of 2 mm. The touch system shall support passive and infrared pens, palm rejection and simultaneous pen-and-finger operation. The display shall be compatible with Windows, Android operating systems. The interactive display shall operate on a built-in Android with a minimum 8 GB RAM and minimum 128 GB internal storage, expandable via embedded or external storage options. Wireless connectivity shall support dual-band Wi-Fi (2.4 GHz and 5 GHz) and Bluetooth, with wired networking via Gigabit Ethernet. Connectivity shall include a minimum of 3x HDMI inputs, 1x HDMI output supporting 4K@60 Hz, audio input and output, SPDIF, RS-232, USB 2.0 and USB 3.0 ports and USB-C ports supporting audio, video, data, LAN sharing and power delivery up to 65 W. Front-facing connectivity ports shall be provided for ease of access. The system</p>	<ul style="list-style-type: none"> Interactive flat panel display shall be an 86-inch 4K UHD system (3840 × 2160) featuring a VA or equivalent panel with D-LED backlighting, delivering a minimum brightness of 450 or more cd/m², contrast ratio of 16,000:1 or better, 178° viewing angles and a response time of 6 ms or better with a minimum panel life of 50,000 hours or more. The front glass shall be minimum 3 mm or more toughened glass with 9H Mohs hardness, incorporating anti-glare and anti-fingerprint coating and be suitable for 16×7 continuous operation. Integrated audio shall include dual built-in speakers of at least 20 W each and a built-in microphone array. Multi-touch capability Of up to 40 touch points on Android or better, with a touch response time of 2 ms, writing accuracy of < 1 mm and minimum object size of 2 mm. The touch system shall support passive and infrared pens, palm rejection and simultaneous pen-and-finger operation. The display shall be compatible with Windows, Android operating systems. The interactive display shall operate on a built-in Android with a minimum 8 GB RAM and minimum 128 GB internal storage, expandable via embedded or external storage Options. Wireless connectivity shall support dual-band Wi-Fi (2.4 GHz and 5 GHz) and Bluetooth, with wired networking via Gigabit Ethernet. Connectivity shall include a minimum of 3x HDMI inputs, 1x HDMI output supporting 4K@60 audio input and output, SPDIF, RS-232, USB 2.0 and USB 3.0 ports and USB-C ports supporting audio, video, data, LAN sharing and power delivery up to 65 W. Front-facing connectivity ports shall be provided for ease of access. The system shall support multi-window operation, picture-in-picture, wireless screen sharing, whiteboard and annotation tools, tile 	<p>Interactive flat panel display shall be an 86-inch 4K UHD system (3840 × 2160) featuring a VA or equivalent panel with D-LED backlighting, delivering a minimum brightness of 450 or more cd/m², contrast ratio of 16,000:1 or better, 178° viewing angles and a response time of 7 ms or better with a minimum panel life of 50,000 hours or more. The front glass shall be minimum 3 mm or more toughened glass with 9H Mohs hardness, incorporating anti-glare and anti-fingerprint coating and be suitable for 16×7 continuous operation. Integrated audio shall include dual built-in speakers of at least 20 W each. Multi-touch capability of up to 40 touch points on Android or better, with a touch response time of ≤ 5 ms, writing accuracy of < 1 mm and minimum object size of 2 mm. The touch system shall support passive and infrared pens, palm rejection and simultaneous pen-and-finger operation. The display shall be compatible with Windows, Android operating systems. The interactive display shall operate on a built-in Android with a minimum 8 GB RAM and minimum 128 GB internal storage, expandable via embedded or external storage options. Wireless connectivity shall support dual-band Wi-Fi (2.4 GHz and 5 GHz) and Bluetooth, with wired networking via Gigabit Ethernet. Connectivity shall include a minimum of 3x HDMI inputs, 1x HDMI output supporting 4K@60 Hz, audio input and output, SPDIF, RS-232, USB 2.0 and USB 3.0 ports and USB-C ports supporting audio, video, data, LAN sharing and power delivery up to 65 W. Front-facing connectivity ports shall be provided for ease of access. The system shall support multi-window operation, picture-in-picture, wireless screen sharing, whiteboard and annotation tools, file management with cloud integration, video recording and collaboration features, along with OTA</p>
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		<p>shall support multi-window operation, picture-in-picture, wireless screen sharing, whiteboard and annotation tools, file management with cloud integration, video recording and collaboration features, along with OTA software updates, application marketplace access and centralized account management.</p> <p>Preferred Make: Optoma/LG/Samsung/Panasonic</p>	<p>management with cloud integration, video recording and collaboration features, along with OTA software updates, application marketplace access and centralized account management. Preferred Make: Optoma/LG/Samsung/ Panasonic</p> <ul style="list-style-type: none"> Brightness 440 cd/m2 Nits or better, Contrast Ratio 5000:1, Response time 10 ms or better, Writing Accuracy: ± 2 mm or better please generalise the specification to match all mentioned makes in tender. <p>i) To ensure continuous product quality and prevent supply of unverified imported/white-label units under Make in India, please add: "The IFPD/Smart Board OEM must hold a valid BIS license (CRS) issued in the OEM's name showing an Indian factory address, active and continuously maintained for the last 5 years, with the quoted model endorsed in the certificate."</p> <p>ii) To ensure product safety and proven market reliability for the computing module, please add: "The OEM of the quoted OPS module must possess a valid BIS registration/certificate issued in the OEM's own name, active and continuously maintained for at least the past three (03) years as on the bid issuance date."</p> <p>iii) Response Time specification be increased to 6.5ms (which is a leading industry standard) from the current 6ms</p> <p>iv) Remove the specification of "built in microphone array" as external microphones are being used in the room which are 3rd party hence having same in smart board will lead to higher costs and redundancy. Also, without built in camera, this feature has no purpose in the smart board hence may be removed.</p>	<p>software updates, application marketplace access and centralized account management. OEM to hold a valid BIS/CRS registration in its own name for the offered model.</p> <p>Preferred Make: LG/Samsung/Panasonic/Sony</p>
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B-3 32inch Confidence monitor		32inch confidence monitor. shall support 1366x768 or better resolution. Brightness 300 nits or better. Minimum 16/7 support. 2xHDMI input. Preferred Make: LG/Samsung/Sony	32inch confidence monitor. shall support 1366x768 or better resolution. Brightness 300 nits or better. Minimum 16/7 support. 2xHDMI input. Preferred Make: LG/Samsun Sony	32inch confidence monitor. shall support 1366x768 or better resolution. Brightness 300 nits or better. Minimum 16/7 support. 2xHDMI input. Preferred Make: LG/Samsung/Sony/Panasonic
B-4 Ceiling microphone		Ceiling microphone with automatic dynamic Beamforming technology, the beam will automatically detect the position of the person speaking and will follow the person around the room at all times. It should have 2 x Dante digital audio (Redundancy), Analog audio out (Phoenix 3-pin) and Ethernet for Control and PoE connectivity ports. The coverage of the ceiling microphone should be min 800 square feet or more. It should have a true voice lift feature to increase audio intelligibility above the ambient noise floor. It should support IT industry standards like IEEE 802.1x. It should be controllable through software that can control and monitor the microphone in any network. It should have min 100 dB SPL, 5ms latency and min 90dBA or higher dynamic range. High-precision audio settings for maximum control, setting to exclude (min 5) and prioritize the areas of the room. It should be certified by Microsoft Teams and Zoom Video conferencing applications. It should have UL 62368 certification (including UL 2043 testing and compliance) and safety certifications or their Indian counterparts. Preferred Make: Sennheiser/Shure/Yamaha	<ul style="list-style-type: none"> The requirement for two redundant Dante digital-audio ports may restrict participation by technically compliant ceiling-array microphone solutions that interface through single Dante/AES67/IP connectivity, analogue Phoenix outputs, or direct USB connection to the room DSP. Further, the requirements for specific UL certifications and Microsoft Teams/Zoom certification should be linked to functional, safety, interoperability, and performance requirements rather than a particular product architecture. Kindly permit equivalent or superior solutions meeting the required audio quality, coverage, safety, and conferencing-platform interoperability parameters. In line with the Government of India's Make in India / Public Procurement (Preference to Make in India) policy, kindly ensure that eligible local suppliers and Indian OEMs meeting prescribed local-content requirements receive applicable preference and are not excluded due to restrictive, proprietary, or brand-specific specifications. Beamforming Should be remove Analog Audio out not required as digital signal we will utilise True Voice lift should be removed (Brand Specific) SPL - 95 dB or above Latency - 13ms or less Dynamic range 75dB or more UL 62368 Certification Not available Sony make to be added 	Ceiling microphone with automatic dynamic Beamforming, to automatically detect the position of the person speaking and will follow the person around the room at all times. It should have 2 x Dante digital audio (Redundancy), Analog-audio out (Phoenix 3-pin) and Ethernet for Control and PoE connectivity ports. The Mic should support voice lifting. The coverage of the ceiling microphone should be min 750 square feet or more. It should have a voice lift feature to increase audio intelligibility above the ambient noise floor. It should support IT industry standards like IEEE 802.1x. It should be controllable through software that can control and monitor the microphone in any network. It should have min 95 dB SPL, 5ms latency and min 90dB or higher dynamic range. High-precision audio settings for maximum control, setting to exclude (min 5) and prioritize the areas of the room. It should be certified by Microsoft Teams and Zoom Video conferencing applications. It should have UL 62368 certification (including UL 2043 testing and compliance) and safety certifications or their Indian counterparts. Preferred Make: Sennheiser/Shure/Yamaha/Sony/Crestron

				<ul style="list-style-type: none"> Please signify Coverage of microphone for Local sound and for VC , please make min coverage distance 400 sqfeet. 	
B-5 Bracket for Ceiling mic			Suitable Ceiling Fixation Bracket for quoted Ceiling microphone. Preferred Make: Sennheiser/Shure/Yamaha	Sony make to be added	Suitable Ceiling Fixation Bracket for quoted Ceiling microphone. Preferred Make: Sennheiser/Shure/Yamaha/Sony
B-6 Ceiling Speaker			Min 6.5" (6.5" LF + 1" HF) two-way coaxial thin edge ceiling loudspeaker, 100V transformer power taps:, Conical dispersion: 150° or more, impedance: 8, low impedance RMS continuous power: 30 watts or more, frequency response: 60 Hz - 20 KHz or better, Max SPL(W/m) : 103 dB or better, Sensitivity: 88 dB or better etc. CE or their Indian counterpart's certification. Preferred Make: Audac/Bose/Tannoy	<ul style="list-style-type: none"> Min 6.5" (6.5" LF + 0.75" HF) two-way coaxial thin edge ceiling loudspeaker. Conical dispersion: 110° or more, frequency response/range: 65 Hz - 20 KHz or better The given spec is proprietary and matches only with AUDAC- CIRA 724, You are requested to make the spec generic to allow fair competition. 	Min 6.5" (6.5" LF + 1" HF) two-way coaxial ceiling loudspeaker, 100V transformer power taps: Conical dispersion: 140° or more, impedance: 8, low impedance RMS continuous power: 30 watts or more, frequency response: 90 Hz - 20 KHz or better, Max SPL(W/m): 103 dB or better, Sensitivity: 88 dB or better etc. CE Certification or their Indian counterparts. Preferred Make: Bose, Tannoy, Bosch Electro Voice (EV)
B-7 Column Speaker			Passive Column Loudspeaker with min 10 or more X 2" Driver or better; RMS 100W or more @ 12/8 Ohms or better; Frequency range: 150Hz – 20Khz or better; Sensitivity 92 dB and Max SPL 113 dB; Beamwidth @1KHz : 140° or more x 20° or less (H X V) . Power Taps 100 V; OEM Mounting Bracket to be Included, Construction: Aluminium, CE Certification or their Indian counterparts. Preferred Make : Audac/Bose/Tannoy	<ul style="list-style-type: none"> Passive Column Loudspeaker with minimum 10 or more × 2" drivers / 8 or more 2.75" drivers or better; RMS power 100W or more @ 12/8 Ohms or better; Frequency range: 150Hz - 17kHz or better; Sensitivity: 87dB and Maximum SPL: 113dB; Beamwidth @1kHz: 140° or more × 40° or less (H × V). Power Taps: 100V; OEM mounting bracket to be included; Construction: Aluminium; CE Certification or higher. Requested Amendment: <p>1) Preferred Make: Audac/Bose/Tannoy/Bosch Electro-voice</p> <p>Generic Specification</p> <p>Passive Column Loudspeaker with min 10 or more X 2" Driver or better; RMS 30W or more @ 12/8 Ohms or better; Frequency range: 195Hz - 20Khz or better; Sensitivity 91 dB and Max SPL 112 dB; Beamwidth @1 KHz : 120° or more x 10° or</p>	Passive Column Loudspeaker with min 8 or more X 2" Driver or better; RMS 100W or more @ 12/8 Ohms or better; Frequency range: 150Hz – 20Khz or better; Sensitivity 92 dB and Max SPL 113 dB; Beamwidthl. @1KHz: 140° or more x 40° or less (H X V). Power Taps 100 V; OEM Mounting Bracket to be Included, Construction: Aluminium, CE Certification or their Indian counterparts. Preferred Make: Bose/Tannoy/Bosch-EV/Creston

				less (H X V) . Power Taps 100 V; OEM Mounting Bracket to be Included, Preferred Make:Biamp/Audac/Bose/Tannoy	
B-8 Amplifier for Ceiling Speakers			<p>Octo channel 4 Ohm energy-efficient amplifier - 8 x 30W (This functionality maybe achieved with 2nos 4 channel amplifier or 4nos 2 channel amplifier) - 70/100V or 4 Ohms, Class-D amplifier technology, Energy star certified, Signal/Noise > 95 dB, THD+N (@ 1 kHz) < 0.1% (1/8 rated Power), Crosstalk (@ 1 kHz) < 70 dB, Frequency Response (± 3 dB) 110 Hz - 20 kHz, Technology Class-D, Protection DC Short circuit, Overheating, Over load, Signal limiting, Cooling Convection cooled, CE Certification or their Indian counterparts. Preferred Make: Audac/Bose/Powersoft/Extron</p>	<ul style="list-style-type: none"> • Octo channel 4 Ohm energy-efficient amplifier - 8 x 30W (This functionality may be achieved with 2 nos. 4-channel amplifiers or 4 nos. 2-channel amplifiers) - 70/100V or 4 Ohms, Class-D amplifier technology, Energy Star certified, Signal/Noise > 95 dB, THD+N (@ 1 kHz) < 0.1% (1/8 rated power), Crosstalk (@ 1 kHz) < 70 dB, Frequency Response (±3 dB) 110 Hz - 20 kHz, Technology Class-D, Protection: DC short circuit, overheating, overload, signal limiting or similar as per OEM. convection cooled, CE Certification or better. • Octo Channel / Four Channel / Dual channel: 8 x 30 W / 4 x 60 W / 2 x 240 W respectively as these shall be running on Transformer tapping of 15 W • Preferred Make: Audac/Bose/Extron/Powersoft/Bosch Dynacord • kindly allow compliant Class-D amplifiers meeting the prescribed audio-performance parameters without insisting on Energy Star certification, which is not commonly available across professional AV amplifier ranges. • The given spec is proprietary and matches only with AUDAC- CEP 803, You are requested to make the spec generic to allow fair competition. • Energy Star is a US-centric certification and is not mandatory under Indian statutory standards. Imposing it restricts standard professional audio OEMs. Kindly delete the requirement for "Energy Star certified" for Item B-8. 	<p>Octo channel 4 Ohm energy-efficient amplifier - 8 x 30W (This functionality maybe achieved with 2nos 4 channel amplifier or 4nos 2 channel amplifier) - 70/100V or 4 Ohms, Class-D amplifier technology, Energy star certified, Signal/Noise > 95 dB, THD+N (@ 1 kHz) < 0.1% (1/8 rated Power), Crosstalk (@ 1 kHz) < 70 dB, Frequency Response (± 3 dB) 110 Hz - 20 kHz, Technology Class-D, Protection DC Short circuit, Overheating, Over load, Signal limiting, Cooling Convection cooled, CE Certification or their Indian counterparts.</p> <p>Preferred Make: Bose, Tannoy, Bosch Electro Voice (EV)</p>
B-9 Amplifier for Column Speakers			<p>Dual Channel power amplifier, RMS/AES power handling @ 4 Ω : 2 x 500 W, @ 8 Ohms : 2 x 250 W, @ 8 Ohm Bridge : 1 x 1000 W, Frequency</p>	<ul style="list-style-type: none"> • 1) Class D / AB 2) Input Sensitivity 0db(1V rms) : Delete 3) Preferred Make : Audac / Bose / Extron / Powersoft / Bosch Dynacord 	<p>Dual Channel power amplifier, RMS/AES power handling @-8 Ohms: 2 x 250-W, Frequency response: 20 Hz - 20 kHz, Signal/ Noise: > 90 dB, THD+N (@ 1 kHz): < 0.1%,</p>

		<p>response: 20 Hz - 20 kHz, Signal / Noise: > 90 dB, THD+N (@ 1 kHz): < 0.1%, Technology: Class-D, Inputs sensitivity: 0 dB (1V RMS), Protection: DC Short circuit; Overheating; Over load; Signal limiting; Convection cooled, should be energy star rated, etc., CE Certification or their Indian counterparts.</p> <p>Preferred Make: Audac/Bose/Powersoft/Extron</p>	<ul style="list-style-type: none"> • Dual Channel power amplifier, RMS/AES power handling @ 4Ω: 2 × 200W, @ 8Ω: 2 × 200W, @ 8Ω Bridge: 1 × 350W, Frequency response: 20 Hz - 20 kHz, Signal to Noise: > 90 dB, THD+N (@ 1 kHz): < 0.1%, Technology: Class-D, Input sensitivity: 0 dB (1V RMS) or similar, Protection: DC short circuit, overheating, overload, signal limiting or similar as per OEM. Convection cooled, should be Energy Star rated, CE Certification or higher. • The given spec is proprietary and matches only with AUDAC- EPA 502, You are requested to make the spec generic to allow fair competition. • For the high-output column-speaker amplifier, Energy Star rating may not be available on many professional models designed for the specified power levels. Kindly evaluate the equipment against the stated electrical and audio-performance criteria and treat Energy Star as non-mandatory. • High-power commercial amplifiers (2 x 500W @ 4Ω / 1000W Bridge) are built for high output and rarely carry US Energy Star consumer efficiency ratings. Kindly remove the requirement for "energy star rated" to allow participation of established professional power amplifier OEMs. 	<p>Technology: Class-D, Inputs sensitivity: 0 dB (1V RMS), Protection: DC Short circuit; Overheating; Over load; Signal limiting; Convection cooled, should be energy star rated, etc., CE Certification or their Indian counterparts.</p> <p>Preferred Make: Audac/Bose/Powersoft/Extron</p>
B-10 Digital Signal Processor		<p>Modular card based/fixed based Digital Signal Processor with minimum 6 input and 12 output, all Inputs shall have AEC feature, 2 GPIO Ports for logic controls, 64x64 or more bi-directional channels of audio over Dante, 2x2 USB port for connectivity with Software based Video Conferencing system (within the system without any external device), THD+N (22Hz to 22kHz) : 0.002% or better (1kHz @ +4dBu, Dynamic Range : 110dB or better, Propagation Delay : 4ms</p>	<ul style="list-style-type: none"> • GPIO Ports should be removed, it's a controller property • 64x64 or more bi-directional channels of audio over Dante (Not required that no. of channels) • 2x2 USB port for connectivity with Software based Video Conferencing system (within the system without any external device) • THD+N (22Hz to 22kHz): 0.002% or better (1kHz @ +4dBu) • Processor Type: 32-bit floating point or better (Brand Specific) 	<p>Modular card based/fixed based Digital Signal Processor with minimum 6 input and 12 output, all Inputs shall have AEC feature, 2 GPIO Ports for logic controls, 64x64 or more bi-directional channels of audio over Dante/AES67, 2x2 USB port for connectivity with Software based Video Conferencing system (within the system without any external device), THD+N (22Hz to 22kHz) : 0.002% or better (1kHz @ +4dBu) or similar, Dynamic Range : 108 dB or better, Propagation Delay : 4ms or better, Sampling</p>

		<p>or better, Sampling Rate : 48kHz, A/D-D/A Converters : 24-bit or better, Operating temperature: at least 0-40 degree celcius or better, Processor Type : 32-bit floating point or better, Phantom Power : +48VDC, Display(s) Single OLED display at front of device, Factory service micro-USB/LAN. The programming should be open architecture. The device should be 19" rack mountable with no more than 1U. Compliances: CE, FCC, RoHS. Preferred Make: Xilica/Biamp/Symetrix</p>	<ul style="list-style-type: none"> • Phantom Power: +48VDC (Not available) • Display(s) Single OLED display at front of device, Factory service micro-USB/LAN (Not required) • The programming should be open architecture (Not Required) • CEE, FCC Certified • Modular card-based/fixed-based Digital Signal Processor with minimum 6 inputs and 12 outputs. All inputs shall have AEC feature, Optional 2 GPIO ports for logic controls, 64x64 or more bi-directional channels of audio over Dante/AES67/Similar or supported by the quoted Microphone, 2x2 USB ports for connectivity with software-based video conferencing systems (within the system without any external device), THD+N (22 Hz to 20 kHz): 0.002% or better (1 kHz @ +4 dBu) or similar, Dynamic Range: 109 dB or better, Propagation Delay: 4 ms or better, Sampling Rate: 48 kHz, A/D-D/A Converters: 24-bit or better, Operating Temperature: at least 0-40°C or better, Processor Type: 32-bit floating point or better, Phantom Power: +48VDC, Display(s): Single OLED display at front of device or as per the OEM, Factory service micro-USB/LAN. The programming should be open architecture. The device should be 19" rack mountable with no more than 1U. Compliances: CE, FCC, RoHS. • Generic Specification : Modular card based/fixed based Digital Signal Processor with minimum 6 input and 12 output or better, all Inputs shall have AEC feature, 2 GPIO Ports for logic controls, 32x32 or more bi-directional channels of audio over Dante, 2x2 USB port for connectivity with Software based Video Conferencing system (within the system without any external device), THD+N 	<p>Rate : 48kHz, A/D-D/A Converters : 24-bit or better, Operating temperature: at least 0-40 degree Celsius or better, Processor Type : 32-bit floating point or better, Phantom Power : +48VDC, Display at front of device as per OEM, Factory service micro-USB/LAN or Web based. The programming should be open architecture. The device should be 19" rack mountable with no more than 1U. Compliances: CE, FCC, RoHS.</p> <p>Preferred Make: QSC/Biamp/Symetrix/Shure</p>
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			<p>(22Hz to 22kHz) : 0.006% or better (1 kHz @ +4dBu, Dynamic Range : 108dB or better, Propagation Delay : 4ms or better, Sampling Rate : 48kHz, A/D-A Converters : 24-bit or better, Operating temperature: at least 0-40 degree Celsius or better, Phantom Power : +48VDC, Display(s) Single OLEO display at front of device, Factory service micro-USB/LAN. The programming should be open architecture. The device should be 19" rack mountable with no more than 1 U. Compliances: CE, FCC, RoHS.</p> <ul style="list-style-type: none"> • Preferred Make: Xilica/Biamp/Symetrix 	
B-11 Microphone with lavalier mic		<p>Wireless microphone system which includes transceiver and 1 unit of body pack transmitter. Body pack transmitter should have inbuilt omnidirectional mic having frequency response 20 Hz – 20 kHz. System operating in the 1880–1900 MHz frequency range with a dynamic range of 110 dB or better and a range of 45-50 meters. It should offer less than 0.03% total harmonic distortion (THD) and 24-bit/48 kHz digital audio processing. Audio networking is supported via Dante and AES67, with AES 256-bit encryption for secure transmission and a latency of 19 ms – 25 ms. The system should support up to two simultaneous transmitters (handheld, bodypack and boundary) and should automatically scan and assign frequencies while avoiding RF interference. The transceiver should include integrated charging docks compatible with handheld, bodypack and boundary transmitters, with battery runtimes of at least 16 hours for bodypack or if battery run time is 8hr – 10 hours, then consider additional two batteries as per IIMS requirement.</p>	<ul style="list-style-type: none"> • Kindly confirm whether transmitter mute indication and battery status indication shall be sufficient, and the requirements for RF range display and battery indication in hours/minutes may be relaxed. • Kindly confirm whether same OEM external charging stations/chargers shall be accepted in lieu of integrated charging docks. • Kindly confirm whether battery runtime of ≥ 12 hours under normal operating conditions shall be accepted. • Kindly confirm whether an external omnidirectional lavalier microphone supplied along with the bodypack transmitter from the same OEM shall be considered compliant. • Kindly confirm acceptance of a wireless microphone system having $THD \leq 0.1\%$ <p>Item B-10 already provides a DSP with Dante capacity and USB connectivity for conferencing integration. In this context, please consider allowing wireless microphone systems with suitable analogue/digital integration instead of mandating Dante and AES67 within the microphone system itself. The requirement for Teams/Zoom may be stated as compatibility rather than formal certification.</p>	<p>Wireless microphone system which includes transceiver and 1 unit of body pack transmitter. Body pack transmitter should have inbuilt omnidirectional mic having frequency response 20 Hz – 20 kHz. System operating in the 1880–1900 MHz frequency range with a dynamic range of 110 dB or better and a range of 45-50 meters. It should offer less than 0.03% total harmonic distortion (THD) and 24-bit/48 kHz digital audio processing. Audio networking is supported via Dante and AES67, with AES 256-bit encryption for secure transmission and a latency of 19 ms – 25 ms. The system should support up to two simultaneous transmitters (handheld, bodypack and boundary) and should automatically scan and assign frequencies while avoiding RF interference. The transceiver should include integrated charging docks compatible with handheld, bodypack and boundary transmitters, with battery runtimes of at least 16 hours for bodypack or if battery run time is 8hr – 10 hours, then consider additional two batteries as per IIMS requirement. Internal or external charger must charge mentioned microphone or its battery. If the system doesn't have access point transmitter, then APT must be</p>

		<p>Internal or external charger must charge mentioned microphone or its battery. If the system doesn't have access point transmitter, then APT must be provided as external. Transmitters feature: mute/unmute buttons and display indicating mute status, RF range and battery life in hours and minutes. The receiver should support both Dante and analog audio interfacing for integration with modern or legacy systems and should include a compact 5x5 audio mixer with Dante (If internal mixer is not there, provide external 6 channel mixer which supports DANTE), analog and USB audio I/O. It should also feature Acoustic Echo Cancellation (AEC), Noise Reduction (NR), Automatic Gain Control (AGC) and Parametric EQ (PEQ) or if system doesn't have in-built DSP, please provide external 8In x 8Out DSP with all these features for optimal audio performance. A web-based GUI is preferred for configuration and should be certified to work with Industry Standard Video conferencing solutions i.e. Microsoft Team & Zoom. Preferred Make: Sennheiser/ClockAudio/Shure</p>	<ul style="list-style-type: none"> Package B already includes an independent commercial Digital Signal Processor (DSP - Item B-10) with 64x64 Dante channels and USB connectivity to handle UC audio processing. Forcing the wireless microphone system itself to have Dante, AES67, and direct Zoom/Teams platform certification restricts major microphone OEMs. Kindly remove the mandatory Dante and AES67 requirement, and change "certified to work with MS Teams & Zoom" to "compatible with MS Teams & Zoom". 	<p>provided as external. Transmitters feature: mute/unmute buttons and display indicating mute status, RF range and battery life in hours and minutes. The receiver should support both Dante and analog audio interfacing for integration with modern or legacy systems and should include a compact 5x5 audio mixer with Dante (If internal mixer is not there, provide external 6 channel mixer which supports DANTE), analog and USB audio I/O. It should also feature Acoustic Echo Cancellation (AEC), Noise Reduction (NR), Automatic Gain Control (AGC) and Parametric EQ (PEQ) or if system doesn't have in-built DSP, please provide external 8In x 8Out DSP with all these features for optimal audio performance. A web-based GUI is preferred for configuration and should be certified to work with Industry Standard Video conferencing solutions i.e. Microsoft Team & Zoom.</p> <p>Preferred Makes: Sennheiser/ClockAudio/Shure/Bosch -EV</p>
B-12 12x Optical Zoom Tracking Camera for Presenter		<p>AI based Full HD 1080p @ 60fps Presenter PTZ Tracking Camera with Dual Camera- one PTZ Camera for Presenter Tracking and second fixed lens Panoramic Camera. PTZ Presenter Camera should support min 12x Optical Zoom and 12x Digital Zoom with Panning range of +170 deg to - 170 deg and Tilt Range of -30 to +90 Degrees, Field of View for PTZ Camera should be min 72 Degree and for Panoramic Camera min. 100 Degree, camera should support simultaneous outputs through HDMI, USB 3.0 and IP with 1x Audio In and should be controlled via RS232 and</p>	<ul style="list-style-type: none"> Modern AI PTZ cameras can provide presenter tracking, auto-framing and related functions through a single optical camera. Kindly permit either single-camera or dual-camera AI tracking solutions where all required tracking outcomes and performance criteria are achieved. The Click Share reference is product-specific and FCC is a jurisdiction-specific conformity mark. Kindly avoid making either a mandatory camera certification where the offered model otherwise meets the requested functional and compliance requirements. 	<p>AI based Full HD 1080p @ 60fps Presenter PTZ Tracking Camera with Dual Camera- one PTZ Camera for Presenter Tracking and second fixed lens Panoramic Camera. PTZ Presenter Camera should support min 12x Optical Zoom and 12x Digital Zoom with Panning range of +170 deg to - 170 deg and Tilt Range of -30 to +90 Degrees, Field of View for PTZ Camera should be min 70 Degree and for Panoramic Camera min. 100 Degree, camera should support simultaneous outputs through HDMI, USB 3.0 and IP with 1x Audio In and should be controlled via RS232 and IP. Should support multiple video streams with PIP. Tracking Camera should</p>

		<p>IP. Should support multiple video streams with PIP. Tracking Camera should support Everywhere Tracking, Partition Tracking, Auto Framing & Gesture Control. Should support PoE and Virtual USB Driver. Camera should be controlled and manageable through centralized software on network. Quoted model should be BIS, CE, Clickshare, FCC & RoHS Certified with Test Lab Reports.</p> <p>Preferred Make: Sony/Lumens/Vaddio</p>	<ul style="list-style-type: none"> • Accordingly, please revise the clause to accept single- or dual-camera AI tracking solutions that meet the stated performance outcomes, without mandating a fixed panoramic lens, Click Share certification or FCC compliance. • Current advanced AI tracking PTZ cameras execute real-time auto-tracking, auto-framing, and presenter tracking using deep-learning computer vision directly through the primary PTZ optical lens, rendering a secondary auxiliary panoramic body redundant. Demanding a physical dual-camera setup restricts advanced single-camera AI tracking OEMs. • "Click Share" is a proprietary trademark of Barco, and "FCC" is a US agency mark. Requiring Click Share certification creates proprietary bias. • Kindly amend the clause to allow single-lens or dual-lens AI Tracking PTZ cameras, and remove the requirement for a mandatory "second fixed lens Panoramic Camera", "Clickshare certification", and foreign "FCC" compliance • Please change to AI Based 4K@30p with fixed single lens for presenter tracking because Dual camera system is OEM Specific and an obsolete technology. Panoramic lens has some limitations. Auto tracking is limited to the viewing angle only. 	<p>support Everywhere Tracking, Partition Tracking, Auto Framing & Gesture Control. Should support PoE and Virtual USB Driver. Camera should be controlled and manageable through centralized software on network. Quoted model should be BIS, CE, -FCC & RoHS Certified.</p> <p>Preferred Make: Sony/Lumens/Vaddio</p>
B-13 12x Optical Zoom for Audience		<p>Full HD PTZ Camera supporting 1080p at 60 Frames per Second, minimum 12X Optical Zoom with FoV of minimum 70 degree and minimum 255 presets. Camera should support simultaneous outputs through HDMI, USB 3.0 & IP with Audio In and controllable via RS232/422 and IP. Panning angle -170° ~ +170°, Tilting angle -30° ~ +90. Camera should support SRT, PoE & should be compatible with Virtual USB</p>	<ul style="list-style-type: none"> • The reference to Click Share and FCC in the audience-camera specification may narrow the field of eligible products without affecting the stated camera performance. Kindly remove these as mandatory conditions, while retaining appropriate compliance and test evidence for the offered equipment. • Mandating third-party proprietary trade certification ("Clickshare") and US regulatory marks ("FCC") on a standard PTZ audience camera restricts eligible camera 	<p>Full HD PTZ Camera supporting 1080p at 60 Frames per Second, minimum 12X Optical Zoom with FoV of minimum 70 degree and minimum 255 presets. Camera should support simultaneous outputs through HDMI, USB 3.0 & IP with Audio In and controllable via RS232/422 and IP. Panning angle -170° ~ +170°, Tilting angle -30° ~ +90. Camera should support SRT, PoE & should be compatible with Virtual USB Driver. Camera shall be controllable and manageable through</p>



		Driver. Camera shall be controllable and manageable through centralised software on network. Quoted model should be BIS, Clickshare, CE, FCC & RoHS Certified with Test Lab Reports. Preferred Make: Sony/Lumens/Vaddio	OEMs and provides an unfair advantage to select vendors. Kindly remove "Clickshare" and "FCC" certification requirements from Item B-13.	centralised software on network. Quoted model should be BIS, CE, FCC & RoHS Certified. Preferred Make: Sony/Lumens/Vaddio
B-14 Video Mixer		Video Mixer cum Processor which can enable Voice Tracking through Ceiling Tiles/Microphones via IP. The Processor should be capable of connecting minimum 8x Ceiling Tiles with 4x IP based PTZ Cameras for Quad view output and Auto Switching. The processor should have USB-C & HDMI Output. Quoted model should be BIS, CE, FCC & RoHS Certified with Test Lab Reports. Preferred Make: Lumens/Crestron/Kramer	<ul style="list-style-type: none"> Please clarify the requirement for BIS certification and test-lab reports for the video mixer/processor. As such specialist equipment may not fall under a mandatory BIS product category, kindly accept suitable manufacturer declarations and applicable CE/RoHS or equivalent conformity evidence for the offered model. Professional AV Video Mixers and Tracking Processors are specialized modular systems that do not fall under the mandatory categories of the Bureau of Indian Standards (BIS CRS) scheme, nor do standard video processors come with independent BIS lab test reports. Imposing this creates an impossible barrier for international and domestic AV processor OEMs. Kindly remove the requirement for BIS certification and Test Lab Reports for Item B-14. 	Video Mixer cum Processor which can enable Voice Tracking through Ceiling Tiles/Microphones via IP. The Processor should be capable of connecting minimum 8x Ceiling Tiles with 4x IP based PTZ Cameras for Quad view output and Auto Switching. The processor should have USB-C & HDMI Output. Quoted model should be BIS, CE, FCC & RoHS. Preferred Make: Lumens/Crestron/Kramer
B-15 HDMI Transmitter		HDMI Transmitter over Cat 6 (HDBaseT) up to 70m with Input 1 HDMI, Cat6 (HDBaseT) Output, 4K@60 4:4:4, HDCP 2.2 Compliant, with CEC, IR and RS-232, Compliance: CE, etc complete as required. Preferred Make: Lightware/ Kramer/ RGB Spectrum	<ul style="list-style-type: none"> Request to please add "Crestron" in approved makes list Request to please add "Cypress Technology " in approved makes list 	HDMI Transmitter over Cat 6 (HDBaseT) up to 60m with Input 1 HDMI, Cat6 (HDBaseT) Output, 4K@60 4:4:4, HDCP 2.2 Compliant, with CEC, IR and RS-232, Compliance: CE, etc complete as required. Preferred Make: Lightware/ Kramer/ RGB Spectrum/Crestron
B-16 HDMI Receiver		HDMI Receiver over Cat 6 (HDBaseT) up to 70m with Input 1 Cat6 (HDBaseT), 1 HDMI Output, 1080p, 2K and 4K@60 4:4:4, HDCP 2.2 Compliant with IR and RS-232, Compliance: CE, etc complete as required. Preferred Make: Lightware/ Kramer/ RGB Spectrum	<ul style="list-style-type: none"> The current specification mentions a transmission distance of 70 metres. We respectfully request the Institute to kindly amend this requirement to 60 metres. We would like to highlight that the proposed amendment is based on the actual application requirement of the project. The equipment is intended for classroom 	HDMI Receiver over Cat 6 (HDBaseT) up to 60m with Input 1 Cat6 (HDBaseT), 1 HDMI Output, 1080p, 2K and 4K@60 4:4:4, HDCP 2.2 Compliant, with IR and RS-232, Compliance: CE, etc complete as required. Preferred Make: Lightware/ Kramer/ RGB Spectrum/Crestron

				<p>applications and not auditorium or large-hall applications.</p> <ul style="list-style-type: none"> Request to please add "Cypress Technology" in approved makes list 	
B-17 Capture Vision System			<p>Recording, Streaming & Webcasting Hardware simultaneously, Built-in 2x HDMI & IP Inputs with 2x Line Inputs, 2x HDMI Outputs. The system should be capable to record up to any two inputs simultaneously in a single frame and as well as individual sources simultaneously. Should have minimum 1TB inbuilt storage and can be connected to local NAS storage. The system should be able to support minimum 3 unicast streams. The recorded files should have the option of time and date stamp. Preferred Make: Lumens/Kramer/RGB Spectrum</p>		<p>Recording, Streaming & Webcasting Hardware simultaneously, Built-in 4x HDMI & IP Inputs with 2x Line Inputs, 2x HDMI Outputs. The system should be capable to record up to any four inputs simultaneously in a single frame and as well as individual sources simultaneously. Should have minimum 1TB inbuilt storage and can be connected to local NAS storage. The system should be able to support minimum 3 unicast streams. The recorded files should have the option of time and date stamp.</p> <p>Preferred Make: Lumens/Kramer/RGB Spectrum</p>
B-18 Wireless presentation			<p>Wireless presentation & Video conferencing devices supporting video resolution up to 4K, with 1 HDMI & 1 Display Port output, 1 Ethernet port, 4 USB port for connecting keyboard, mouse, USB camera, USB mics, etc, Support for iOS, Windows and Android operating systems, display for minimum 6 users screen with 1 display & 12 users screen using 2 displays, Support for DHCP, Audio out, support for annotation & whiteboard feature, content should be watched on connected smartphones, iPhone, iPad, Laptops, MacBooks & at the same time users can zoom the content for clarity & do annotation from their devices. User should be allowed to install any third-party application on the device like MS Teams/Zoom/Blue Zeans/Any soft VC App. Device can be used for soft VC application, connect 252 participants simultaneously, CE or equivalent Indian</p>	<ul style="list-style-type: none"> Request to please add "Crestron" in approved makes list Current specification is highly proprietary, and only the Kramer VIA Campus² PLUS appears to comply. To encourage fair competition and allow participation from multiple OEMs, we request that the specification be revised as follows: "Minimum 1 HDMI or 1 DisplayPort output, supporting display of at least four user screens simultaneously." 3 USB port for connecting keyboard, mouse, USB camera, USB mics" This revision will help ensure a more open and competitive specification while meeting the functional requirement. Current specification is highly proprietary, and only the Kramer VIA Campus² PLUS appears to comply. To encourage broader competition and enable participation from multiple OEMs, we request that these parameters be removed. Removing these restrictive requirements will allow at least three OEMs to qualify while maintaining the 	<p>Wireless presentation & Video conferencing devices supporting video resolution up to 4K, with min 2 outputs (HDMI or DP in any combination is required)), 1 Ethernet port, 3 or more USB port for connecting keyboard, mouse, USB camera, USB mics, etc, Support for iOS, Windows and Android operating systems, display for minimum 6 users screen with 1 display & 12 users screen using 2 displays, Support for DHCP, Audio out, support for annotation & whiteboard feature, content should be watched on connected smartphones, iPhone, iPad, Laptops, MacBooks & at the same time users can zoom the content for clarity & do annotation from their devices. User should be allowed to install any third-party application on the device like MS Teams/Zoom/Blue Zeans/Any soft VC App. Device can be used for soft VC application, connect 252 participants simultaneously, Certification: CE/or Indian counterpart etc.</p>



B-19 Control System			<p>counterpart Certification. Preferred Make: Mersive/ Kramer/ Barco</p> <p>Control System, Hardware Platform with 1 Instance, Ports: 3 USB: On 2 USB 3.0 connectors and 1 USB connector, 1 LAN: On an RJ-45 connector, Inputs 1 HDMI: On a female HDMI connector, Outputs 1 HDMI: On a female HDMI connector, General Processor: Intel Gemini Lake QC SOC, Main Memory: 4GB LPDDR4 (2400), Storage: 32GB eMMC, Networking: 1 x Gigabit LAN, Wi-Fi 802.11 ac/b/g/n dual band, VESA mount. Preferred Make: Extron/ Kramer/QSC</p>	<p>intended functionality and ensuring a fair and competitive procurement process.</p> <ul style="list-style-type: none"> Current specification is highly proprietary, and only the Kramer KC-VirtualBrain1 appears to comply. To encourage fair competition and allow participation from multiple OEMs, we request that the specification be revised as follows: "AV Control System with a minimum of 2x RS-232, 4x IR, 4x Relay, 4x I/O, 1x LAN port, 1 GB RAM, and 8 GB Flash storage. Support for both IPv4 and IPv6 over Ethernet. CE compliant. The Control System and Touch Panel shall not require an internet connection for configuration, deployment, or programming." This revision will maintain the required functionality while enabling at least three OEMs to qualify, ensuring a more open and competitive bidding process. Request to please add "Crestron" in approved makes list Software of Hardware based control system with to control the devices via Ethernet, Serial, IR and GPIO ports. The control system should not have any limitation in no of devices to be controlled via any no of Wired, Wireless (iOS, Android or Windows) touch screen panels. 	<p>Preferred Make: Mersive/ Kramer/ Barco/ Crestron</p> <p>Control System, Hardware Platform with 1 Instance, Ports: 3 USB: On 2 USB 3.0 connectors and 1 USB connector, 1 LAN: On an RJ-45 connector, General Processor: Intel Gemini Lake QC SOC/ Equivalent in AMD, Main Memory: 4GB LPDDR4 (2400), Storage: 32GB eMMC, Networking: 1 x Gigabit LAN, Wi-Fi 802.11 ac/b/g/n dual band, VESA mount. CE/Indian counterpart Certification.</p> <p>Preferred Make: Extron/Kramer/QSC/Crestron</p>
B-20 Touch screen panel			<p>8-inch IPS colour screen Touch panel, screen resolution 1280 X 800, brightness 350cd/m², contrast ratio 1000:1, 16:10 aspect ratio, ±80° horizontal and vertical wide viewing angles, ambient light sensor, proximity sensor. Should have inbuilt Wi-Fi 6, 802.11 a/b/g/n/ax/ax & Bluetooth 5.0, Ethernet: 10/100/1000 Mbps LAN, capacitive multi touch technology, multi-touch points and 2-finger gesture capabilities., System Memory: 4GB LPDDR4, Internal Storage Memory: 32GB eMMC, support</p>	<ul style="list-style-type: none"> 7/8-inch capacitive touch screen control panel with a minimum resolution of 1280x800, brightness of 350 cd/m², contrast ratio of 850:1, and 16:10 aspect ratio. The panel should include an ambient light sensor and proximity sensor. Ethernet: 10/100/1000 Mbps LAN, capacitive multi touch technology, Customizable GUI using same OEM GUI Software, Power over Ethernet (PoE) 802.3af Certification: CE, FCC, UL, RoHs, WEEE. 	<p>7-inch or better IPS/TFT colour screen Touch panel, screen resolution 1280 X 800, brightness 350cd/m², contrast ratio 850:1, 16:10 aspect ratio, ±80° horizontal and vertical wide viewing angles, ambient light sensor, proximity sensor. Should have inbuilt Wi-Fi 6, 802.11 a/b/g/n/ax/ax & Bluetooth 5.0, Ethernet : 10/100/1000 Mbps LAN, capacitive multi touch technology, multi-touch points and 2-finger gesture capabilities., System Memory: 4GB LPDDR4, Internal Storage Memory: 32GB eMMC, support for video formats</p>

		<p>video format H.264 / H.265,VC-I, MPEG-4, VP9/VP8, Support for Image Codecs: JPEG, BMP, GIF, PNG, Should have front 5MP FF camera, Customized GUI using same OEM GUI Software, Power over Ethernet (PoE) 802.3af Certification: CE, FCC, UL, RoHs, WEEE or their Indian counterparts. Preferred Make: Extron/Kramer/QSC</p>	<ul style="list-style-type: none"> • kindly retain product-safety and environmental compliance requirements that are relevant to the offered touch panel, but permit CE/RoHS or equivalent evidence in place of mandatory UL and WEEE documentation where those particular schemes are not applicable. Request to please add "Crestron" in approved makes list • UL is a proprietary US laboratory standard and WEEE is a European domestic recycling mandate. Mandating UL and WEEE for low-voltage PoE touch panels creates unfair non-tariff trade barriers against domestic and other international manufacturers. Kindly delete the requirements for "UL" and "WEEE" certifications, retaining standard CE and RoHS compliance. 	<p>H.264/H.265,VC-I, MPEG-4, VP9/VP8, Support for Image Codecs: JPEG, BMP, GIF, PNG, Should have front 5MP FF camera, Customizable GUI using same OEM GUI Software, Power over Ethernet (PoE) 802.3af Certification: CE, FCC, UL, RoHs, WEEE or their Indian counterparts.</p> <p>Preferred Make: Extron/Kramer/QSC/Crestron</p>
B-21 HDMI Matrix Switcher		<p>4K@60Hz 4:4:4 4X4 HDMI Matrix Switcher, 4 HDMI inputs, 4 HDMI Outputs, audio embedding for each HDMI inputs & audio de-embedding for each HDMI output, 4 balanced audio stereo audio outputs & 4 S/PDIF output on female RCA connectors, 2K and 4K support, HDCP 2.2 Compliant, data rate 18Gbps, 4 Preset configurations, Support for HDR10, xvYCC colour, Dolby TrueHD/DTS-HD Master Audio, 3D Video, Controllable through Ethernet and RS-232, Certification: CE or its Indian counterpart etc complete as required. Preferred Make: Lightware/ Kramer/ RGB Spectrum</p>	<ul style="list-style-type: none"> • Request to please add "Crestron" in approved makes list • Request to please add "Cypress Technology" in approved makes list • Current specification is highly proprietary, and only the Kramer VS-44H2A appears to comply. To encourage broader competition and enable participation from multiple OEMs, we request that the specification be revised as follows: "Audio de-embedding from HDMI inputs and/or HDMI outputs with a minimum of 2 balanced stereo audio outputs." This revision maintains the functional requirement while allowing at least three OEMs to qualify, ensuring a more open and competitive procurement process. 	<p>4K@60Hz 4:4:4 4X4 HDMI Matrix Switcher, 4 HDMI inputs, 4 HDMI Outputs, audio embedding for each HDMI inputs & audio de-embedding for each HDMI output, 4 balanced audio stereo audio outputs & 4 S/PDIF output on female RCA connectors, 2K and 4K support, HDCP 2.2 Compliant, data rate 18Gbps, 4 Preset configurations, Support for HDR10, xvYCC color, Dolby TrueHD/DTS-HD Master Audio, 3D Video, Controllable through Ethernet and RS-232, Certification: CE, etc complete as required.</p> <p>Preferred Make: Lightware/ Kramer/ RGB Spectrum</p>
B-22 Table		<p>Wooden/Digital Interactive Podium, 4X2 Feet Wooden Top with Motorized Tilting of the Interactive Panel, with provision to install Gooseneck Microphone, Interactive panel, Keyboard Tray and space to store AV equipment and PC. The Podium should be table type having cable manager with power socket,</p>		<p>Wooden/Digital Interactive Podium, 4X2 Feet Wooden Top with Motorized Tilting of the Interactive Panel, with provision to install Gooseneck Microphone, Interactive panel, Keyboard Tray and space to store AV equipment and PC. The Podium should be table type having cable manager with power socket, USB, VGA, HDMI and CAT 6 etc.</p>



			USB, VGA, HDMI and CAT 6 etc. The same should be made from 18mm FR Plywood of ISI mark and design should be approved by IIMS before supply. Podium should be supplied with Wacom tablet 15inch or higher. Preferred Make: Custom		The same should be made from 18mm FR Plywood of ISI mark and design should be approved by IIMS before supply. Podium should be supplied with Interactive tablet with 16" or more active area, WQXGA or better resolution, 260cd/m2 or better brightness, 8192 pen pressure levels, 20-degree tilt integration stand, Connectivity: Type-C, Mini HDMI, USB Type A, anti-Glare glass, 12ms or lower response time. it should have a battery free pen with eraser
B-23 HDMI DA			1x2 HDMI Distribution amplifier. Max. Data Rate — 6.75Gbps (2.25Gbps per graphic channel). It shall be HDTV Compatible and HDCP Compliant. HDMI Support — Deep Color, x.v.Color, Lip Sync, CEC. 3D Pass-Through. EDID Pass-through. Preferred Make: Lightware/ Kramer/ RGB Spectrum	<ul style="list-style-type: none"> • Request to please add "4K 60 4:4:4 resolution support" as mentioned for switcher, Transmitter & Receivers. • Request to please add "Crestron" in approved makes list • Request to please add "Cypress Technology" in approved makes list 	1x2 HDMI Distribution amplifier. Max. Data Rate — 6.75Gbps (2.25Gbps per graphic channel). It shall be HDTV Compatible and HDCP Compliant. HDMI Support — Deep Colour, x.v.Colour, Lip Sync, CEC. 3D Pass-Through. EDID Pass-through. Preferred Make: Lightware/Kramer/RGB Spectrum/Crestron
B-24 USB Switcher			4x1 USB 3.2 switcher with two USB-C and two USB-B host ports, supporting up to 10 Gbps data transfer and automatic or manual host switching to share USB peripherals among multiple devices. It provides three USB-A and one USB-C device ports, USB-C Power Delivery 3.0 charging up to 60 W for connected hosts and total device charging current up to 2A. The unit shall include an Ethernet (LAN) port with PoE support, RS-232 and GPIO for control, shall offer browser-based management and firmware upgrades. Preferred Make: Lightware/ Kramer/Extron	<ul style="list-style-type: none"> • Request to please modify as below "The unit shall include an Ethernet (LAN) port with PoE support or RS-232 or GPIO for control" • Current specification is highly proprietary, and only the Kramer SWT3-41-U appears to comply. To encourage broader competition and enable participation from multiple OEMs, we request that these parameters be removed. Removing these restrictive requirements will allow at least three OEMs to qualify while maintaining the intended functionality and ensuring a fair and competitive procurement process. • Request to please add "Cypress Technology" in approved makes list 	4x1 USB 3.2 switcher with two USB-C and two USB-B host ports, supporting up to 10 Gbps data transfer and automatic or manual host switching to share USB peripherals among multiple devices. It provides three USB-A and one USB-C device ports, USB-C Power Delivery 3.0 charging up to 60 W for connected hosts and total device charging current up to 2A. The unit shall include an Ethernet (LAN) port with PoE support or RS-232 or GPIO for control, shall offer browser-based management and firmware upgrades. Preferred Make: Lightware/ Kramer/Extron
B-25 N/W Switch			24-port network switch with switching capacity of 56Gbps. Standard 802.1d Spanning Tree support. Support for IEEE 802.3ad Link Aggregation Control Protocol. Support for up to 4094 VLANs simultaneously. Should support 2000		24-port network switch with switching capacity of 56Gbps. Standard 802.1d Spanning Tree support. Support for IEEE 802.3ad Link Aggregation Control Protocol. Support for up to 4094 VLANs simultaneously. Should support 2000 multicast groups.

			multicast groups. Preferred Make: Cisco/Alcatel/HP/Netgear		Preferred Make: Cisco/Alcatel/HP
B-26 Racks Cable and Connectors			Racks of appropriate size, Cables and Connectors as per the site requirement.		Racks of appropriate size, Cables and Connectors as per the site requirement.
C-1 Microphone with lavalier mic			Wireless microphone system which includes transceiver and 1 unit of body pack transmitter. Body pack transmitter should have inbuilt omnidirectional mic having frequency response 20 Hz – 20 kHz. System operating in the 1880–1900 MHz frequency range with a dynamic range of 110 dB or better and a range of 45-50 meters. It should offer less than 0.03% total harmonic distortion (THD) and 24-bit/48 kHz digital audio processing. Audio networking is supported via Dante and AES67, with AES 256-bit encryption for secure transmission and a latency of 19 ms – 25 ms. The system should support up to two simultaneous transmitters (handheld, bodypack and boundary) and should automatically scan and assign frequencies while avoiding RF interference. The transceiver should include integrated charging docks compatible with handheld, bodypack and boundary transmitters, with battery runtimes of at least 16 hours for bodypack or if battery run time is 8hr – 10 hours, then consider additional two batteries as per IIMS requirement. Internal or external charger must charge mentioned microphone or its battery. If the system doesn't have access point transmitter, then APT must be provided as external. Transmitters feature: mute/unmute buttons and display indicating mute status, RF range and battery life in hours and minutes. The receiver should support both Dante and	<ul style="list-style-type: none"> • Kindly confirm whether transmitter mute indication and battery status indication shall be sufficient, and the requirements for RF range display and battery indication in hours/minutes may be relaxed. • Kindly confirm whether same OEM external charging stations/chargers shall be accepted in lieu of integrated charging docks. • Kindly confirm whether battery runtime of ≥ 12 hours under normal operating conditions shall be accepted. • Kindly confirm whether an external omnidirectional lavalier microphone supplied along with the bodypack transmitter from the same OEM shall be considered compliant. • Kindly confirm acceptance of a wireless microphone system having $\text{THD} \leq 0.1\%$ 	Wireless microphone system which includes transceiver and 1 unit of body pack transmitter. Body pack transmitter should have inbuilt omnidirectional mic having frequency response 20 Hz – 20 kHz. System operating in the 1880–1900 MHz frequency range with a dynamic range of 110 dB or better and a range of 45-50 meters. It should offer less than 0.03% total harmonic distortion (THD) and 24-bit/48 kHz digital audio processing. Audio networking is supported via Dante and AES67, with AES 256-bit encryption for secure transmission and a latency of 19 ms – 25 ms. The system should support up to two simultaneous transmitters (handheld, bodypack and boundary) and should automatically scan and assign frequencies while avoiding RF interference. The transceiver should include integrated charging docks compatible with handheld, bodypack and boundary transmitters, with battery runtimes of at least 16 hours for bodypack or if battery run time is 8hr – 10 hours, then consider additional two batteries as per IIMS requirement. Internal or external charger must charge mentioned microphone or its battery. If the system doesn't have access point transmitter, then APT must be provided as external. Transmitters feature: mute/unmute buttons and display indicating mute status, RF range and battery life in hours and minutes. The receiver should support both Dante and analog audio interfacing for integration with modern or legacy systems and should include a compact 5x5 audio mixer with Dante (If internal mixer is not there, provide external 6 channel mixer which

		analog audio interfacing for integration with modern or legacy systems and should include a compact 5x5 audio mixer with Dante (If internal mixer is not there, provide external 6 channel mixer which supports DANTE), analog and USB audio I/O. It should also feature Acoustic Echo Cancellation (AEC), Noise Reduction (NR), Automatic Gain Control (AGC) and Parametric EQ (PEQ) or if system doesn't have in-built DSP, please provide external 8In x 8Out DSP with all these features for optimal audio performance. A web-based GUI is preferred for configuration and should be certified to work with Industry Standard Video conferencing solutions i.e. Microsoft Team & Zoom. Preferred Make: Sennheiser/ClockAudio/Shure	supports DANTE), analog and USB audio I/O. It should also feature Acoustic Echo Cancellation (AEC), Noise Reduction (NR), Automatic Gain Control (AGC) and Parametric EQ (PEQ) or if system doesn't have in-built DSP, please provide external 8In x 8Out DSP with all these features for optimal audio performance. A web-based GUI is preferred for configuration and should be certified to work with Industry Standard Video conferencing solutions i.e. Microsoft Team & Zoom. Preferred Makes: Sennheiser/ClockAudio/Shure/Bosch -EV
D-1 Desktops		Form Factor: All-in-one14th Generation Intel Core i7-13700 (2.10 GHz to 5.10GHz), 30 MB cache, 16 cores, 20 threads or higher or equivalent AMD processor, Intel Q670 Chipset or higher or equivalent AMD Chipset, 32GB (1x32GB) DDR5 or Higher, 3200 MHz RAM or higher, expandable up to 64 GB, Integrated Intel UHD Graphics or equivalent AMD Graphics, 512 GB PCIe 4.0 NVMe M.2 SSD, 23.8 inch or higher display, FHD, Anti-Glare, WLED, Touch, 250 Nits, Wide Viewing Angle, Tilt, swivel and height adjustable stand with flexibility with built-in FHD Camera, Security: Discrete TPM 2.0 with Chassis Intrusion switch, Wireless Keyboard, Wireless Mouse with Mouse Pad, Integrated Gigabit Ethernet LAN, Wi-Fi 6.0 or Higher, Bluetooth 5.2 or higher,	NO CHANGE

			<p>2 x 3W stereo speaker, built-in Mic, 5MP/5MP + IR Camera, 1 x RJ-45 port Gigabit, 8 x USB ports with minimum 2 x USB 3.2 Gen, 1 x Type-C port, headphone and microphone combo, 1 x DP 1.4, 1 x HDMI, Windows 11 Professional 64 bit, Certified For OEM: ISO 9001: 2008, BEE/BIS Certificate, Microsoft hardware Certification, Power Supply: <=100 Watts AC Adapter,</p> <p>To be supplied with required accessories, connecting cables, Power Adapter and driver media. Preferred Make: Dell/HP/Acer</p>	
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GENERIC QUERIES

	Chapter/Section No.	Page No.	Clause as per NIT	Clarification Sought	Response to Pre-bid Query
		NA	Point w.r.t Certifications in Various Products.	Why foreign certifications are required for MII compliant equipment(s)	Bidder shall offer products meeting the required mentioned international certifications or their Indian counterparts. Bidder has to mention which certificate is being offered against the required certifications and how these certifications are equivalent to desired international certifications.
		NA	Point w.r.t. bidders asking about better specifications to be quoted.		Bidder is free to quote a product with similar or higher specifications.
		NA	Point w.r.t. inclusion of Brands		Makes indicated are only for reference purposes
	Section III, Eligibility Criteria	7	<p>Point (a):</p> <p>The Tenderer/Bidder shall be a Government Organization/PSU/PSE/Public Limited Company/Private Limited Company, duly registered under the applicable laws of India and having a credible standing.</p>	LLP, Proprietorship firm, Partnership firm may be included.	Proprietorship firm/Partnership Firms/LLP firms along with Government Organization/ PSU/PSE/Public Limited Company/Private and Public Limited Company is accepted
	Section III, Point F and Section IV Point 1.13	7 & 9	f. The Bidder should be having a positive net worth in the last three consecutive financial years, with an Average annual turnover of at least INR 4 Crores during the last three (3) financial years in India.		No Change

			<p>Audited financial statements or certified financial documents shall be submitted as proof. For MSMEs and Start-Ups duly registered with the Government of India the turnover criteria shall be relaxed by 20% (i.e. these firms should have Average annual turnover of at least INR 3.2 Crores in the last three financial years (FY 2023-24, 2024-25, 2025-26), subject to meeting of quality, scope technical specification and other criteria asked in this document.</p> <p>1.13 No relaxation in the prescribed turnover or financial eligibility criteria shall be provided to MSMEs/Start-ups under this tender. The relaxation/exemption available to eligible MSEs shall be limited to exemption from submission of EMD, as per applicable provisions.</p>		
	Section III Point J	7	<p>j. The Bidder must have successfully executed similar works during the last five (5) years, meeting any one of the following criteria:</p> <ul style="list-style-type: none"> • At least three (3) similar projects, each costing not less than INR 130 Lakhs, <p>OR</p> <ul style="list-style-type: none"> • At least two (2) similar projects, each costing not less than INR 162 Lakhs, <p>OR</p> <ul style="list-style-type: none"> • At least one (1) similar project costing not less than INR 260 Lakhs, out of which at least one project must have been completed during the last two (2) financial years. Documentary evidence such as work orders and completion certificates shall be submitted. 	High single-work thresholds up to INR 2.60 Crores and the restriction of requiring mandatory completion within the last 2 financial years limit competition. Please align the criteria with standard Central Government/CPWD norms across the 5-year window and remove the restrictive condition of completion within only the last 2 financial years.	No change, condition will remain same.
	Section – VI Point A	26	<p>a) The institute reserves the right to select either Items A-1 and A-2 or Item B-1 for Packages A and B.</p>	Please confirm whether this will only be applicable to L-1 bidder only, or any bidder L-1 in Part A or B separately will be considered.	This clause stands deleted. The L-1 shall be on complete package.

	Section – VI Point D	26	d) All components of each system shall be sourced from the same Original Equipment Manufacturer (OEM). Assembled products comprising components of multiple makes, as well as refurbished or reconditioned products, shall not be accepted	Please clarify the same, which all item numbers to be considered as from OEM	This clause stands deleted.
	Section VII Delivery Schedule and Penalty for Delay	29	The project has to be completed in 60 days' time. Penalty at the rate of 0.5% or part thereof of the order value per week, subject to a maximum of 2.5% will be imposed for delayed delivery and installation.	Request to kindly increase the Project Completion time from 60 days to 90 days as at present worldwide war like situation, delivery of material taking long time.	Project Completion time has been revised from 60 days to 120 days
	Section VII Payments:	29-30	<ul style="list-style-type: none"> • 50% of the order value after receipt of material • 30% of the order value after successful installation and commissioning • Remaining 20% of the order value shall be released over the warranty period, distributed annually as follows: 2% at the end of the 1st year, 3 % at the end of the 2nd year, 4% at the end of the 3rd year, 5% at the end of the 4th year and 6 % at the end of the 5th year, subject to satisfactory performance during each respective year. 	<ul style="list-style-type: none"> • Request to kindly revise the Payment terms as 80% of Capex inclusive 100% GST of CAPEX and OPEX at the time of Delivery and balance 20% after Installation and 100% OPEX Payment in equal instal laments on quarterly basis. • Withholding 20% of capital hardware payment over 5 years severely impairs vendor cash flow and escalates pricing. The institute is already holding a 5% Performance Bank Guarantee for the entire 5-year warranty/O&M plus 60 days, and O&M is separately paid under Package E. Please revise the terms to: 80% on delivery, 20% on successful commissioning and handover. • we request to amend the same as 70 % against delivery, 20 % against installation, 10 % on hand over. As 5 % amount of security deposit is already there with held for complete 5 years, it will be additional burden on bidder. • Request you to consider below payment terms of the said work: 	<p>Revised payment terms:</p> <ul style="list-style-type: none"> • 70% of the invoice value after receipt of material • 90% of the order value less Amount paid, after successful installation and commissioning • Remaining 10% of the order value shall be released over the warranty period, distributed annually as follows: 1% at the end of the 1st year, 1.5% at the end of the 2nd year, 2% at the end of the 3rd year, 2.5% at the end of the 4th year and 3% at the end of the 5th year, subject to satisfactory performance during each respective year. Against submission of a bank guarantee of equivalent value valid for the period 63 months 10% balance can be released after completion of work.



				<ul style="list-style-type: none"> • 50% of the order value after material delivery • 30% of the order value after successful installation • 10% of the order value after testing and commissioning • Remaining 10% of the order value shall be released after handover of the system • Request that this payment may please be released against submission of PBG. 	
	Section – VII	31	<p>b) Qualification of the Site Engineer/Technician:</p> <p>The Site Engineer/Technician will have 6 days a week working schedule. In case of leave for more than 2 days a successful bidder will provide suitable replacement. In case the performance of the person is not found up to the expectations of IIMS, successful bidder will provide immediate replacement.</p>	<p>Please also clarify that during long holidays like after each Semesters the Deployed Engineer need to stay in the Institute Campus during holiday or not.</p>	<p>Person is required for the entire duration of the project irrespective of semesters breaks.</p>
	Section III Eligibility Criteria Point-K	8	<p>The Bidder shall have a functional support/service facility located in Himachal Pradesh/Uttarakhand to ensure timely service and maintenance support.</p>	<p>You are requested to allow the Haryana state also, it's also equality near to Uttarakhand.</p>	<p>The Bidder shall have a functional support/service facility located in Himachal Pradesh/Uttarakhand/Chandigarh/NCR to ensure timely service and maintenance support.</p>
	Section III Eligibility Criteria Point-J		<p>Point w.r.t. clarification on past experience and similar projects</p>	<p>Please clarify what is meant by similar projects.</p>	<p>The similar project shall mean works completed with design, supply, installation, testing, commissioning and integration of AV facilities for Classrooms/hybrid/Smart Classrooms involving any five out of the following in a single contract. Please note that out of completed works sr.no (a,b & c) should have been essentially carried out.</p> <p>a) SITC of professional audio-video system, AV production and recording systems; (b) Video-conferencing/hybrid classroom integration; b) Networking, control and AV automation; c) Interactive display/whiteboard or presentation systems;</p>

					<p>d) SITC of PTZ/fixed camera and audio systems;</p> <p>e) Video production/switching/recording and live-streaming systems</p> <p>f) Post-production/content creation facilities; and</p> <p>g) End-to-end integration, commissioning and user training.</p> <p>Past experience means experience in executing projects comprising of the above-mentioned activities.</p> <p>At least one of the completed projects should have been executed for an IIT/IIM/NIT/IIIT/Central University/Central Government Institution/ PSU/autonomous educational or research institution.</p>
	NA	NA	NA	No proof of past experience specified in the NIT. Please clarify whether the bidder will require to demonstrate Proof of Concept (POC) of the quoted solution.	<p>The Institute reserves the right to require the Bidder to conduct a Proof of Concept (PoC) to validate the technical and functional compliance of the proposed solution. The PoC may be conducted at the Institute's premises, at any existing project implementation site, or at the Bidder's Experience Center, as decided by the Institute.</p> <p>The Bidder shall submit an unconditional acceptance undertaking on its official letterhead, duly signed by its authorized signatory. Failure to submit the undertaking or comply with the PoC requirements may result in rejection of the bid, in accordance with the tender terms and applicable procurement rules.</p>
	Section III Eligibility Criteria,	8, Point 1	The bidders shall have at least 5 AV Engineers on its rolls at least for 3 years before as on the last date of submission of bid. Documentary evidences in support of this to be attached with the bid.	The condition for Engineer on companies' payrolls for at least 3 years, as some times Engineers change the Job when they got experience in one industry, although you have also asked for 1	No Change



				full time trained Engineer to be deployed in the Campus, hence there is no requirement of this condition. Kindly edit this clause as a Well qualified Engineer required for day-to-day support to be posted in the Institute campus for O&M.	
	Section VII, Compliance to Make in India:	27 Point 1st	Bids have to comply to Make In India (Make in India Circular No. P-45021/2/2017-PP(BE- II) of DPIIT dated 16.09.2020) and Land Border sharing OM & Order (Public Procurement No.1) ref. F.No.6/18/2019-PPD dated 23.07.2020 and subsequent addendums/ amendments. Since the Estimated Cost of Tender is below Rs. 10 Crores, the Bidder must submit self-certification for Local Content as per Annexure – VI on a Non-Judicial Stamp Paper Costing Rupees 100/- (One Hundred Only). All the Pages of the Document must be signed by the certifying authority. Percentage of Local Content shall be calculated on the overall Bid level. Only “Class-I local supplier” having minimum 50% local content and “Class-II local supplier” having minimum 20% local content for the overall solution, shall be eligible to bid in this procurement. The bidder has to submit the consolidated MII (local content) % for the complete solution being offered as per Annexure - VI. Public Procurement (Preference to Make in India) Order, 2017, as amended from time to time, including amendments applicable as on the date of publication of this tender.	The brands and Certifications asked in the tender Documents are foreign Brand and do not have compliance with MII as per circular No. P-45021/2/2017-PP(BE-II) of DPIIT dated 16.09.2020. Hence request to kindly amended this clause and remove the asked brand and certifications.	Bidder shall offer products meeting the required mentioned international certifications or their Indian counterparts in case of MII compliant products. Bidder has to mention which certificate is being offered against the required certifications and how these certifications are equivalent to desired international certifications.
	Section III, Point E	7	e. The Bidder shall be an Original Equipment Manufacturer (OEM) or an authorized dealer/partner for the quoted brand(s) of equipment. Valid authorization certificates from the OEM(s) must be submitted along with the bid.	The OEM certification should be asked from the L-1 bidder only.as many specifications are propriety only, will lead to blackmailing & cartelization by OEM.	No Change
		30	Operation and Management (O&M): The Vendor will be required operate and manage the facility deployed for a period of 5 (Five) years from the date of completion of the project. During the O & M period, 1 (one) qualified technician has to be stationed at site for the trouble-free	As discussed, we request you to remove this point, since it will become very difficult to integrate 3rd Party Equipment in the future.	No Change

		<p>performance of the audio-visual equipment. The Rates quoted by the bidder should be inclusive of O & M charges for a period of 5 (Five) years.</p> <p>a) Responsibilities of the Vendor during O&M:</p> <ul style="list-style-type: none"> • Fully support, configure, maintain AV system. • Install and integrate new AV device hardware and applications • Resolve problems reported (hardware/software) by end user. • Performing routine inspections, cleaning and testing of equipment (microphones, mixers, projectors, displays etc.) to prevent sudden failures. • To maintain sufficient inventory of the critical equipment such as microphones, mixers, projectors, displays etc.) • Keeping AV equipment, control panels, streaming platforms etc. updated and optimized for performance. • Handling immediate replacement of the failed parts/equipment • Submit monthly, quarterly, six monthly and annual reports with regards to maintenance of the facility 		
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- All other specifications/items & conditions mentioned in the tender document shall remain the same/unchanged.


 Senior Consultant (Admin.)
 IIM Sirmaur, H.P. (173031)
