e-TENDER
For
Supply and Installation/Setup of Hybrid Video Conferencing and Live Streaming Solution for 12 rooms in Himachal Pradesh

(e-Tender No: iHub/e-Tender/2025-26/001)

IIT Mandi iHub and HCi Foundation
C/o Indian Institute of Technology Mandi,
North Campus, VPO Kamand,
Near Mind Tree School, District Mandi,
Himachal Pradesh, India.
Pincode: 175075

Tender document can also be downloaded from https://www.ihubiitmandi.in/tender/

Online bids are invited from eligible bidders for the supply and installation/setup of Hybrid Video Conferencing and Live Streaming Solution for 12 rooms in Himachal Pradesh.

SCHEDULE OF EVENTS FOR SUBMISSION OF THE TENDERS/ BIDS

S.No	Information	Details
1	RFP No. and Date	iHub/e-Tender/2025-26/001
2	Duration of Rate Contract	Six months from date of issuance of empanelment letter/ LOI.
3	Bid validity period	180 days from the last date (deadline) for submission of e-Tenders.
4	Bid submission start date	01/04/2025 11:00 AM
5	Bid submission End date	07/04/2025 02:30 PM
6	Opening of e-Tenders Bids	08/04/2025 11:00 AM
7	Tender Download Site	https://www.ihubiitmandi.in/tender/
8	Venue	IIT Mandi iHub and HCi Foundation C/o Indian Institute of Technology Mandi, North Campus, VPO Kamand, Near Mind Tree School, District Mandi, Himachal Pradesh, India. Pincode: 175075

TECHNICAL SPECIFICATIONS

Details of equipment and minimum technical specifications/requirements are given below:

Hardware/Software Specifications:

S No	Specifications	Model	Qty
	Himachal HC CJ Room		
1	**PTZ Camera (with Mount) (Facing towards Hon'ble Bench)**	**Canon CR-N100**	1
1.01	Resolution: 1920 x 1080 px or higher		
1.02	Zoom: 15 x Optical or higher.		
1.03	PTZ: +/- 170° Pan and +/-30 Tilt or higher		
1.04	Output Ports Supported: USB/HDMI		
1.05	Control: Remote Control (IR), Web Client /PC Client		
1.06	Power: Runs on PoE+ or DC Power		
1.07	IP Streaming: H.264/ H.265/ RTMP & RTMPS/ RTP/ RTSP/ SRT/ TCP or equivalent		
1.08	Comprehensive On-Site Warranty: 1 Year or as per the product warranty.		
1.09	Frame Rate: 50 fps at 50Hz or higher in all resolutions.		
1.1	Image Device: 1/2.5" CMOS or better		
1.11	Horizontal resolution: 5MP or better		
1.12	Streaming: Minimum single stream or better		
	Streaming requirement:		
1.13	Physical Layer: 10/100/1000 base TX Ethernet 17 or higher		
1.14	Protocol: Minimum TCP/IP /HTTP/ RTP/RTSP		
1.15	IP Support: Static/Dynamic or both		
1.16	Lens Type: Varifocal minimum 5-100 mm or better		
1.17	Shutter speed: 1/50–1/1000 or better		
1.18	Approvals: CE, FCC, RoHS & BIS		
1.19	Compatibility: Compatible with various Video Coferencing software (e.g., Zoom/ Microsoft Teams/ Webex or VC platform used/approved in the govt./semi govt. Organizations or any other VC platforms).		
	Adjustment Features for Wall/Ceiling mount:		
1.2	180-degree rotation for optimal camera positioning		
2	**PTZ Camera (with mount) (Facing towards Advocates)**	**PeopleLink Elite 4K Premium 12X Camera**	**2**
2.01	Resolution: 1920 x 1080 px or higher.		
2.02	Zoom: 10x Optical or higher.		
2.03	PTZ: +/- 170° Pan and +/-30 Tilt or higher		

2.04	Output Ports Supported: USB/HDMI		
2.05	Remote Control: Remote Control (IR), Web Client /PC Client		
2.06	Power: Runs on PoE+ or DC Power		
2.07	IP Streaming: H.264/ H.265/ RTMP & RTMPS/RTP/ RTSP/ SRT/ TCP por equivalent		
2.08	Frame Rate: 50 fps at 50Hz or higher in all resolutions.		
2.09	Comprehensive On-Site Warranty: 1 Year or as per the product warranty		
2.1	Image Device: 1/2.5" CMOS or better		
2.11	Horizontal resolution: 5MP or better		
2.12	Streaming: Minimum single stream or better		
	Streaming requirement:		
2.13	Physical Layer: 10/100/1000 base TX Ethernet 17 or higher		
2.14	Protocol: TCP/IP /HTTP/ RTP/ RTSP or equivalent		
2.15	IP Support: Static/Dynamic or both		
2.16	Lens Type: Varifocal minimum 5-100 mm or better		
2.17	Shutter speed: 1/50–1/1000 or better		
2.18	Approvals: CE, FCC, RoHS & BIS		
2.19	Compatibility: Compatible with various Video Conferencing software (e.g., Zoom/ Microsoft Teams/ Webex or VC platform used/approved in the govt./semi govt. Organizations or any other VC platforms).		
	Adjustment Features for Wall/Ceiling mount:		
2.2	180-degree rotation for optimal camera positioning		
3	**Wired Gooseneck Microphone (with stand for Hon'ble Bench)**	**Peoplelink Gooseneck PL-TT-GN-MP -18**	**5**
3.01	Microphone Type: Gooseneck Condenser Microphone		
3.02	Polar Pattern: Cardioid		
3.03	Frequency Response Range: 50 Hz to 17 - 20 kHz Sensitivity: -30 to -40 dB		
3.04	Maximum SPL tolerance: 120 -130 dB		
	Output:		
3.05	Type: Balanced XLR Output		
3.06	Flexible Gooseneck:		
3.07	Length: 18-21 inches		
3.08	Material: Durable metal alloy construction		
	Integrated Features:		
3.09	LED Indicator: High-visibility LED for microphone status (active/on/off)		
3.1	RF Rejection: Integrated RF shielding to minimize interference.		
	Shock Mount:		
3.11	Integrated shock mount to reduce handling noise and vibrations		

3.12	Compatibility: Compatible with standard DSP mixers and audio equipment		
	Power Requirements:		
3.13	Phantom Power: Requires +48V phantom power		
3.14	Comprehensive On-Site Warranty: 1 Year or as per the product warranty.		
4	**Wired Gooseneck Microphone (with stand for Advocates)**	**Peoplelink Gooseneck PL-TT-GN-MP-32**	**2**
4.01	Microphone Type: Gooseneck Condenser Microphone		
4.02	Polar Pattern: Cardioid		
4.03	Frequency Response Range: 50 Hz to 17 - 20 kHz Sensitivity: -30 to -40 dB		
4.04	Maximum SPL tolerance: 120 -130 dB		
	Output:		
4.05	Type: Balanced XLR Output		
4.06	Flexible Gooseneck:		
4.07	Length: 30-36 inches		
4.08	Material: Durable metal alloy construction		
	Integrated Features:		
4.09	LED Indicator: High-visibility LED for microphone status (active/on/off)		
4.1	RF Rejection: Integrated RF shielding to minimize interference		
	Shock Mount:		
4.11	Integrated shock mount to reduce handling noise and vibrations		
4.12	Compatibility: Compatible with standard DSP mixers and audio equipment		
	Power Requirements:		
4.13	Phantom Power: Requires +48V phantom power		
4.14	Comprehensive On-Site Warranty: 1 Year or as per the product warranty.		
5	**Speakers (With Mount)**	**PeopleLink Wall Mount Speakers**	**4**
5.01	Wired Passive Speaker: Ensure compatibility with the amplifier's power output.		
5.02	Maximum SPL Tolerance: 90 dB		
	Frequency Response		
5.03	Range: 50 Hz to 17-20 kHz (+/- 3 dB)		
	Power Handling		
5.04	Continuous Power: 50W RMS		
5.05	Peak Power: 50W		
5.06	Sensitivity: ≥ 90 dB (1W/1m)		
	Drivers		

5.07	Woofer: 5.25-inch or high-performance woofer for low and mid frequencies.		
5.08	Integrated Tweeter: 1-inch compression driver or dome tweeter for high frequencies.		
	Coverage Pattern		
5.09	Horizontal Coverage: 90 degrees		
5.1	Vertical Coverage: 60 degrees		
	Inputs		
5.11	Types: Metal Binding post terminal.		
5.12	Compatibility: Allows connection from various audio sources and mixers.		
5.13	Material: Robust ABS plastic or wood		
5.14	Design: Bass reflex or sealed design for enhanced bass response.		
5.15	Wall Mount: wall mount brackets for fixed installations.		
	Connectivity and Controls		
5.16	EQ Controls: Basic EQ settings (bass, treble) for on-the-fly adjustments.		
	Protection and Reliability		
5.17	Overload Protection: Protects the speaker from damage due to excessive power.		
5.18	Thermal Protection: Prevents overheating during prolonged use.		
5.19	Short Circuit Protection: Ensures speaker safety in case of wiring faults.		
5.2	Weight: Lightweight for easy installation and handling.		
	Additional Features		
5.21	Integrated Handles: For easy transportation and setup		
5.22	Comprehensive On-Site Warranty: 1 Year or as per the product warranty.		
6	**Amplifier & Digital Signal Processor**	**PeopleLink Amplifier 200 W + PeopleLink-Pro-Audio-DSP 12 Channel**	**1**
	Digital Multi-Channel Amplifier:		
6.01	Channels: 4 Inputs / 2 Outputs		
6.02	Minimum Output Power: 100W RMS per channel (into 8 ohms)		
6.03	Total Harmonic Distortion (THD): Less than 0.1% at rated power		
6.04	Frequency Response Range: 50 Hz to 17-20 kHz (+/- 1 dB)		
6.05	Signal-to-Noise Ratio (SNR)		
6.06	High SNR: ≥ 90 - 110 dB		
6.07	Input Types: Pheonix Connector /RCA/6.3mm		
6.08	Output Types: Pheonix Connector / RCA		
6.09	Flexibility: Provides multiple output options for connecting to various speakers and audio systems.		

	Digital Signal Processing (DSP)		
	Functions:		
	Input and Output Channels:		
6.1	Input Channels: 8 Channels with Phoenix Connector inputs for connecting microphones and audio sources.		
6.11	Output Channels: 6 Channels with Phoenix Connector outputs for sending processed audio to amplifiers, speakers, or recording equipment.		
6.12	DSP Cores: Multi-core DSP architecture with sufficient processing power to handle real-time audio processing for all 6 input and output channels simultaneously.		
6.13	Echo Cancellation: Built-in automatic echo cancellation.		
6.14	Noise Reduction: Advanced noise reduction algorithms.		
6.15	Automatic Gain Control (AGC): To maintain consistent audio levels		
6.16	Processing Capability: Capable of implementing complex audio algorithms such as EQ (Equalization), dynamics processing, and feedback suppression without introducing noticeable latency.		
	Audio Processing Features:		
6.17	EQ (Equalization): Parametric EQ with adjustable frequency bands (typically 4 to 8 bands per channel), Q factors, and gain levels.		
6.18	Dynamics Processing: Includes compressors, limiters, and expanders for managing audio dynamics.		
6.19	Feedback Suppression: Advanced algorithms for detecting and automatically suppressing feedback frequencies.		
	Audio Quality and Resolution:		
6.2	Sample Rate and Bit Depth: 24-bit/44.1kHz or 24-bit/48kHz or higher.		
6.21	Audio Latency: Low-latency audio processing to minimize delay between audio input and output.		
	Connectivity Options:		
6.22	Analog Inputs/Outputs: 6 balanced analog inputs and outputs (Balanced XLR) for direct connection to microphones, mixers, and other audio equipment.		
6.23	Digital Inputs/Outputs: Digital inputs/outputs (AES/EBU, SPDIF) for interfacing with digital audio sources and equipment or equivalent.		
6.24	Network Connectivity: Ethernet port for remote control, monitoring, and integration into networked audio systems.		
	Control and Interface:		
6.25	User Interface: Front panel controls with LCD display for intuitive navigation and real-time monitoring of input and output levels, processing status, and settings.		

6.26	Remote Control: Support for remote control via dedicated software application (e.g., webbased interface or proprietary control software).		
6.27	Presets Storage: Ability to store and recall multiple presets for different room setups or audio configurations.		
	Power Requirements:		
6.28	Power Supply: Standard AC mains power (110V/220V/ or above) or Power over Ethernet (PoE+).		
6.29	Mounting: Rack-mountable design with included mounting brackets.		
6.3	Comprehensive On-Site Warranty: 1 Year or as per the product warranty.		
7	**Display (with Mount)- 55"**	**Samsung QB55C**	**2**
7.01	Resolution: 1920 x 1080 pixel's resolution or higher		
7.02	Aspect Ratio: 16:9 widescreen format.		
7.03	Screen Size: 55 inches		
7.04	Brightness: 400 nits or more.		
7.05	Contrast Ratio: Standard contrast ratios of 1000:1 or higher for vivid image quality.		
7.06	Response Time: Typical Response Time: 8ms or lower.		
7.07	Viewing Angles: Horizontal/Vertical Viewing Angles: Wide viewing angles (typically 178 degree's horizontal and vertical) for clear visibility from different positions. Color Depth: Color Support: 16.7 million colors (8-bit) for accurate color representation.		
7.08	Refresh Rate: Standard Refresh Rate: 60Hz, suitable for most general-purpose applications.		
7.09	Connectivity: HDMI in port minimum 2, USB in port minimum 2, Ethernet LAN (RJ-45), Audio Out Stereo Mini Jack, Wi-Fi, Bluetooth.		
7.1	Panel Type: Technology: LED-backlit LCD panel for energy efficiency and vibrant colors.		
7.11	IPS or VA Panel or TN (Twisted Nematic): Depending on the models.		
	Power Specifications:		
7.12	Power Consumption: Energy-efficient with power management features.		
7.13	Power Supply: Supports standard AC mains power (110V/220V/ or above, 50/60Hz).		
	Connectivity Options:		
7.14	Video Inputs: HDMI, DisplayPort inputs for versatile connectivity to various devices.		
7.15	Audio: Built-in speakers or audio-out ports for connecting external speakers or headphones.		

7.16	Display Working/Operations Hours: 16X7 hours or higher.		
7.17	Full motion Mount: Wall /Ceiling Mount		
7.18	Pan: 180/360 degrees		
7.19	Tilt: -15 to +15 degrees		
7.2	Weight capacity: As per the display screen size.		
7.21	Warranty Period: As per the default warranty of the component or minimum 1 year		
8	**Smart Table Monitors (with mount for Hon'ble Bench)**	**PeopleLink Interact 21M**	**3**
8.01	Screen Size: 21 inches or higher (diagonal measurement).		
8.02	Resolution: Full HD (1920 x 1080 pixels)		
8.03	Panel Type: IPS (In-Plane Switching)		
8.04	Brightness: 250 cd/m^2		
8.05	Contrast Ratio: 1000:1		
8.06	Response Time: 8ms (Gray-to-Gray) or less		
8.07	Viewing Angles: 1780 horizontal/vertical		
8.08	Power Consumption: Energy-efficient with power management features.		
8.09	Connectivity: USB, HDMI, DisplayPort		
8.1	Features: Slim design, wide colour gamut		
8.11	Panel Type: LED (Light Emitting Diode) or higher, anti-glare display.		
8.12	Connectivity: HDMI, DisplayPort, USB inputs Response Time:5ms or less		
8.13	Refresh Rate: Standard 60Hz refresh rate or higher.		
8.14	Operating System: Built-in OS (such as Android or proprietary OS) for smart functionality.		
8.16	Warranty Period: As per the default warranty of the component or minimum 1 year.		
	Table Mount/Stand Design:		
8.17	Wider and Longer Arm: Support monitors from 21''-35'' with load capacity up to 12KG or higher.		
8.18	VESA Support: Support 75x75mm and 100x100mm or equivalent.		
8.19	Ergonomic Design: +85° to -30° screen tilt adjustment, 360° rotations for landscape or portrait mode; Upright lift 9.8" (250mm) and +90° to -90° swivel.		
8.2	Easy Installation: C-clamp or Grommet hole installation or equivalent.		
9	**HDMI Distribution Amplifier**	**nT 13AX02**	**1**
9.01	Configuration: 1 input, 4 outputs (1x4)		
9.02	HDMI Input: 1 x HDMI Type A (19-pin)		
9.03	HDMI Outputs: 4 x HDMI Type A (19-pin)		
9.04	Resolution Support: Up to 4K (3840 x 2160 pixels) at 60Hz		

9.05	Supported Formats: Full HD (1920 x 1080 pixels), Ultra HD or higher.		
9.06	HDMI Version: HDMI 2.0 or higher		
9.07	Colour Depth: Supports 8-bit, 10-bit, and 12-bit Deep Colour.		
9.08	Audio Pass-through: Supports audio passthrough to all outputs.		
9.09	HDCP Version: HDCP 2.2 compliant or higher		
9.1	Backward Compatibility: HDCP 1.4 compatible		
9.11	EDID Management: Supports EDID management for compatibility with different displays		
9.12	CEC Pass-through: Consumer Electronics Control (CEC) pass-through support		
9.13	Power Supply: DC/External DC/inbuilt AC or generic		
9.14	Input Voltage: 100-240V AC, 50/60Hz		
9.15	Output Voltage: 5V DC or 12V DC.		
9.16	Power Consumption: Energy-efficient with power management features.		
	Physical and Environmental Specifications:		
9.17	Operating Temperature: 0°C to 40°C (32°F to 104°F)		
9.18	Storage Temperature: -20°C to 60°C (-4°F to 140°F)		
9.19	Humidity: 20% to 90% RH (non-condensing)		
9.2	Mounting: Rack-mountable design with included mounting brackets.		
9.21	LED Indicators: Power, signal status for each output		
9.22	Firmware Upgradable: Via USB or network connection		
9.23	Signal Amplification: Built-in signal amplification for extended cable lengths.		
9.24	Remote Control: IR remote control or webbased management interface or RS232 and Ethernet		
9.25	Warranty Period: As per the default warranty of the component or minimum 1 year.		
10	**HDMI Extender (As per requirement)**	**nT 16BD03**	**2**
10.01	Compatibility: HDMI 1.4, HDMI 2.0 or better		
	Maximum Distance:		
10.02	Over CAT6: Up to 70 meters (230 feet) for 1080p; up to 40 meters (131 feet) for 4K		
	Resolution Support:		
10.03	Up to 4K UHD (3840 x 2160) at 60Hz		
10.04	HDCP 2.2 compliance or higher		
	Audio Formats Supported:		
10.05	LPCM, DTS-HD Master Audio, Dolby True HD		

	Ports:		
10.06	Transmitter: 1 x HDMI input, 1 x RJ45 output		
10.07	Receiver: 1 x RJ45 input, 1 x HDMI output		
	Power Supply:		
10.08	External power adapter included		
10.09	PoE (Power over Ethernet) options available		
	Additional Features:		
10.1	EDID pass-through for seamless communication between devices		
10.11	IR pass-through for remote control extension		
10.12	LED indicators for power and link status		
	Environmental Specifications:		
10.13	Operating Temperature: 0°C to 50°C (32°F to 122°F)		
10.14	Storage Temperature: -20°C to 70°C (-4°F to 158°F)		
10.15	Humidity: 10% to 90% non-condensing		
10.16	Safety Standards: UL listed		
10.17	Warranty Period: As per the default warranty of the component or minimum 1 year.		
11	**USB Extender (As per requirements)**	**nT 16EC04**	**3**
	General Specifications:		
11.01	Type: USB3.0		
11.02	Transmission Method: CAT6/7 Ethernet cables or fiber optics or other high speed cable extenders.		
	USB Extender:		
11.03	Compatibility: USB 2.0, USB 3.0 or better		
	Maximum Distance:		
11.04	Over CAT6: Up to 100 meters		
11.05	Data Transfer Rate: USB 3.0: Up to 5 Gbps		
	Ports:		
	Power Supply:		

11.06	External power adapter included		
11.07	USB-powered options available for shorter distances		
	Additional Features:		
11.08	Plug and play, no driver installation required		
11.09	LED indicators for power and data transmission status		
	Environmental Specifications:		
11.1	Operating Temperature: 0°C to 50°C (32°F to 122°F)		
11.12	Storage Temperature: -20°C to 70°C (-4°F to 158°F)		
11.14	Humidity: 10% to 90% non-condensing		
11.16	Safety Standards: UL listed		
11.18	Warranty Period: As per the default warranty of the component or minimum 1 year.		
12	**Cables**		
12.01	Generic Cables (Lump Sum)		
	Type: Tower Computer System/Desktop		**1**
12.21	Processor: Processor x86Processor i.e. Intel i5,12000series/AMDRyzen5, 5000 series (Six Core and Twelve thread or higher), 4.4 GHz or higher turbo frequency) or better.		
12.22	Chipset: Suitable chipset for quoted processor with upgradable support.		
12.23	Memory: 8GB DDR-53200 MHz or higher expandable up to 64GB.		
12.24	Storage: 512GB SSD or higher		
12.25	Graphics Card: Integrated HD Graphics or better Graphic controller.		
12.26	Network: Integrated Gigabit Ethernet controller with RJ-45 connector, WIFI and Bluetooth 5.0 or higher.		
12.27	External Ports: 2xUSB2.0 or higher and 3xUSB 3.0 or higher ports, 1 HDMI port, 1 DP port.		
12.28	Audio: Integrated sound controller.		
12.29	Keyboard: Standard 104 Keys OEM Keyboard with Rupee Symbol and USB Interface		

12.3	Mouse: OEM Optical USB Scroll Mouse with Mousepad Display: 23" or higher LCD/TFT display non-touch having FHD (1920x1080) or better resolution and TCO/BIS certified.		
12.31	Webcam: Full HD with integrated mic		
12.32	Power Management & DMI: System with Power management features & Desktop Management Interface implementation		
12.33	Power efficiency: Minimum 85%		
12.34	OS Support: Latest version of Windows 64 bit Accessories: System user manual and all other necessary accessories		
12.35	Compliance & Certifications: Complete system should be BIS registered, BEE / Energy Star certified and RoHS Complied and EPR Complied		
12.36	Stand: Standard Height adjustable		
12.37	Warranty Period: As per the default warranty of the component or minimum 1 year.		
13	**24U Rack**		**1**
	Type and Size:		
13.01	Rack Height: 24U		
13.02	Rack Width: Standard 19-inch		
13.03	Rack Depth: Adjustable, minimum 24 inches		
13.04	Construction Material: High-quality SPCC cold-rolled steel with black powder-coated finish		
	Dimensions and Weight Capacity:		
13.05	Height: 42 inches (106.68 cm)		
13.06	Width: 23.6 inches (60 cm) outer, 19 inches (48 cm) inner		
13.07	Depth: Adjustable, minimum 24 inches (61 cm)		
13.08	Weight Capacity: Minimum 75 kg (165 lbs)		
	Note: The bidder can quote the rack with dimensions compatible with computer hardware required in the proposed solution.		
	Doors and Panels:		
13.09	Front Door: Perforated and lockable		
13.1	Rear Door: Perforated and lockable		

13.11	Side Panels: Removable with quick-release latches		
	Cooling and Ventilation:		
13.12	Pre-installed Fans: One 120mm top-mounted fan		
13.13	Ventilation: Perforated doors for passive airflow		
13.14	Optional Fans: Additional fan mounts available		
	Cable Management:		
13.15	Vertical Cable Management: Included (bars or rings)		
13.16	Horizontal Cable Management: Included (bars or rings)		
13.17	Cable Entry Points: Top and bottom with grommets grommets		
	Mounting and Rails:		
13.18	Mounting Rails: Adjustable depth, with U markings		
13.19	Compatibility: Standard 19-inch rack equipment		
13.2	Grounding: Grounding points included		
	Additional Features:		
13.21	Casters: Optional, with locking brakes		
13.22	Leveling Feet: Included		
13.23	Colour: Black		
13.24	Compliance and Standards:		
13.25	Certifications: Must comply with relevant industry standards and certifications for safety and durability.		
13.26	Warranty: Complete system with minimum Three (3) / Five (5) Years OEM on site comprehensive warranty support. MAF from OEM is a must.		
	Room No 1		
14	**PPTZ Camera (with mount)**	**PeopleLink Elite 4K Premium 12X Camera**	**3**
14.01	Resolution: 1920x1080px or higher.		
14.02	Zoom: 10x Optical or higher.		

14.03	PTZ: +/- 170° Pan and +/-30 Tilt or higher		
14.04	Output Ports Supported: USB/HDMI		
14.05	Control: Remote Control (IR), Web Client /PC Client.		
14.06	Power: Runs on PoE+ or DC Power		
14.07	IP Streaming: H.264/ H.265/ RTMP & RTMPS/ RTP/ RTSP/ SRT/ TCP or equivalent		
14.08	Comprehensive On-Site Warranty: 1 Year or as per the product warranty.		
14.09	Frame Rate: 50 fps at 50Hz or higher in all resolutions.		
14.1	Image Device: 1/2.5" CMOS or better		
14.11	Horizontal resolution: 5MP or better		
14.12	Streaming: Minimum single stream or better		
	Streaming requirement:		
14.13	Physical Layer: 10/100/1000 base TX Ethernet 17 or higher		
14.14	Protocol: Minimum		
14.15	IP Support: Static/Dynamic or both		
14.16	Lens Type: Varifocal minimum 5-100 mm or better		
14.17	Shutter speed: 1/50–1/1000 or better		
14.18	Approvals: CE, FCC, RoHS & BIS		
14.19	Compatibility: Compatible with various Video Conferencing software (e.g., Zoom/ Microsoft Teams/ Webex or VC platform used/approved in the govt./semi govt. Organizations or any other VC platforms).		
14.2	Adjustment Features for Wall/Ceiling mount: 180-degree rotation for optimal camera positioning		
15	**Wired Gooseneck Microphones (with stand for Hon'ble Bench)**	**Peoplelink Gooseneck PL-TT-GN-MP -18**	**4**
15.01	Microphone Type: Gooseneck Condenser Microphone		

15.02	Polar Pattern: Cardioid		
15.03	Frequency Response Range: 50 Hz to 17 - 20 kHz Sensitivity: -30 to -40 dB		
15.04	Maximum SPL tolerance: 120 -130 dB		
	Output:		
15.05	Type: Balanced XLR Output		
15.06	Flexible Gooseneck:		
15.07	Length: 18-21 inches		
15.08	Material: Durable metal alloy construction		
	Integrated Features:		
15.09	LED Indicator: High-visibility LED for microphone status (active/on/off)		
15.1	RF Rejection: Integrated RF shielding to minimize interference		
	Shock Mount:		
15.11	Integrated shock mount to reduce handling noise and vibrations		
	Compatibility:		
15.12	Compatible with standard DSP mixers and audio equipment's		
	Power Requirements:		
15.13	Phantom Power: Requires +48V phantom power		
15.14	Comprehensive On-Site Warranty: 1 Year or as per the product warranty.		
16	**Wired Gooseneck Microphones (with stand for Advocates)**	**Peoplelink Gooseneck PL-TT-GN-MP-32**	**2**
16.01	Microphone Type: Gooseneck Condenser Microphone		
16.02	Polar Pattern: Cardioid		
16.03	Frequency Response Range: 50 Hz to 17 - 20 kHz		
16.04	Sensitivity: -30 to -40 dB		
16.05	Maximum SPL tolerance: 120 -130 dB		
	Output:		

16.06	Type: Balanced XLR Output		
16.07	Flexible Gooseneck:		
16.08	Length: 30-36 inches		
16.09	Material: Durable metal alloy construction		
	Integrated Features:		
16.2	LED Indicator: High-visibility LED for microphone status (active/on/off)		
16.21	RF Rejection: Integrated RF shielding to minimize interference		
	Shock Mount:		
16.22	Integrated shock mount to reduce handling noise and vibrations		
	Compatibility:		
16.23	Compatible with standard DSP mixers and audio equipment's.		
	Power Requirements:		
16.24	Phantom Power: Requires +48V phantom power		
16.25	Comprehensive On-Site Warranty: 1 Year or as per the product warranty.		
16.26	(Each microphone should be able to capture clear and intelligible sound from a distance of approximately 3-5 feet.)		
	Speakers		**2**
17.01	As per room 1		
	Amplifier & Digital Signal Processing		**1**
18.01	Digital Multi-Channel Amplifier:		
18.02	Channels: 4 Inputs / 2 Outputs		
18.03	Minimum Output Power: 100W RMS per channel (into 8 ohms)		
18.04	Total Harmonic Distortion (THD): Less than 0.1% at rated power		
18.05	Frequency Response Range: 50 Hz to 17-20 kHz (+/- 1 dB)		
18.06	Signal-to-Noise Ratio (SNR)		

18.07	High SNR: ≥ 90 - 110 dB		
	Inputs		
18.08	Types: Pheonix Connectors /RCA/6.3mm Inputs		
	Outputs		
19.09	Types: Pheonix Connector / RCA		
19.1	Flexibility: Provides multiple output options for connecting to various speakers and audio systems.		
	Digital Signal Processing (DSP)		
	Functions:		
19.11	**Input and Output Channels:**		
19.12	Input Channels: 8 Channels with Phoenix Connector inputs for connecting microphones and audio sources.		
19.13	Output Channels: 6 Channels with Phoenix Connector outputs for sending processed audio to amplifiers, speakers, or recording equipment.		
19.14	DSP Cores: Multi-core DSP architecture with sufficient processing power to handle real-time audio processing for all 6 input and output channels simultaneously.		
19.15	Echo Cancellation: Built-in automatic echo cancellation.		
19.16	Noise Reduction: Advanced noise reduction algorithms.		
19.17	Automatic Gain Control (AGC): To maintain consistent audio levels		
19.18	Processing Capability: Capable of implementing complex audio algorithms such as EQ (Equalization), dynamics processing, and feedback suppression without introducing noticeable latency.		
19.19	**Audio Processing Features:**		
19.2	EQ (Equalization): Parametric EQ with adjustable frequency bands (typically 4 to 8 bands per channel), Q factors, and gain levels.		
19.21	Dynamics Processing: Includes compressors, limiters, and expanders for managing audio dynamics.		
	Feedback Suppression: Advanced algorithms for detecting and automatically suppressing feedback frequencies.		
19.22	**Audio Quality and Resolution:**		
19.23	Sample Rate and Bit Depth: 24-bit/44.1kHz or 24-bit/48kHz or higher.		

19.24	Audio Latency: Low-latency audio processing to minimize delay between audio input and output.		
19.25	**Connectivity Options:**		
19.26	Analog Inputs/Outputs: 6 balanced analog inputs and outputs (Balanced XLR) for direct connection to microphones, mixers, and other audio equipment.		
19.27	Digital Inputs/Outputs: Digital inputs/outputs (AES/EBU, SPDIF) for interfacing with digital audio sources and equipment or equivalent.		
	Network Connectivity: Ethernet port for remote control, monitoring, and integration into networked audio systems.		
19.28	**Control and Interface:**		
19.29	User Interface: Front panel controls with LCD display for intuitive navigation and real-time monitoring of input and output levels, processing status, and settings.		
19.3	Remote Control: Support for remote control via dedicated software application (e.g., webbased interface or proprietary control software).		
	Presets Storage: Ability to store and recall multiple presets for different room setups or audio configurations.		
19.31	Power Requirements:		
19.32	Power Supply: Standard AC mains power (110V/220V/ or above) or Power over Ethernet (PoE+).		
19.33	Mounting: Rack-mountable design with included mounting brackets.		
	Comprehensive On-Site Warranty: 1 Year or as per the product warranty.		
	Wall/Ceiling Mount for existing Display		2
21.01	Full motion Mount: Wall /Ceiling Mount		
21.02	Pan: 180/360 degrees		
21.03	Tilt: -15 to +15 degrees		
21.04	Weight capacity: As per the display screen size.		
21.05	Compatibility: Compatible with existing Display		
	Smart Table Monitors		**2**

22.01	As room 1		
	HDMI Distribution Amplifier		**1**
23.01	As per room 1		
	HDMI Extender (as per requirements)		**2**
24.01	As per room 1		
	USB Extender (As per requirements)		**2**
25.01	As per room 1		
	Cables		
26.01	As per room 1		
	Computer System/Codec/or similar		**1**
27.01	As per room 1		
	24U Rack		1
28.01	As per room 1		
	Note Displays will be used from exisitng hardware		
	room No. 3,4,5,6,7 and 8		
	PTZ Camera (with mount)	2	**12**
29.01	As per room no 2		
	Wired Gooseneck Microphone (with stand facing towards Hon'ble Bench)	1	**6**
30.01	As per room no 2		
	Wired Gooseneck Microphone (with stand facing towards Advocates)	2	**12**
31.01	As per room no 2		
	Speakers	2	**12**

32.01	As per room no 2		
	Amplifier & Digital Signal Processor	1	**6**
33.01	**As per** room no 2		
	Display (with Mount)		**12**
34.01	Resolution: 1920 x 1080 pixel's resolution or higher		
34.02	Aspect Ratio: 16:9 widescreen format.		
34.03	Screen Size: 32 inches		
34.04	Brightness and Contrast: Brightness: Typically ranges from 250 to 350 cd/m^2 for indoor use.		
34.05	Contrast Ratio: Standard contrast ratios of 1000:1 or higher for vivid image quality.		
34.06	Response Time: Typical Response Time: 8ms or lower.		
34.07	Viewing Angles: Horizontal/Vertical Viewing Angles: Wide viewing angles (typically 178 degree's horizontal and vertical) for clear visibility from different positions.		
34.08	Colour Depth: Colour Support: 16.7 million colours (8-bit) for accurate colour representation.		
34.09	Refresh Rate: Standard Refresh Rate: 60Hz, suitable for most general-purpose applications.		
34.1	Connectivity: HDMI in port minimum 2, USB in port minimum 2, Ethernet LAN (RJ-45), Audio Out Stereo Mini Jack, Wi-Fi, Bluetooth		
34.11	Panel Type: Technology: LED-backlit LCD panel for energy efficiency and vibrant colours.		
34.12	VA Panel or IPS (In-Plane Switching) or TN (Twisted Nematic): Depending on the model,		
	Power Specifications:		
34.13	Power Consumption Energy-efficient with power management features.		
34.14	Power Supply: Supports standard AC mains power (110V/220V/ or above, 50/60Hz).		
	Connectivity Options:		
34.15	Video Inputs: HDMI, DisplayPort inputs for versatile connectivity to various devices.		
34.16	Audio: Built-in speakers or audio-out ports for connecting external speakers or headphones.		

34.17	Display Working/Operations Hours: 16X7 hours or higher.		
34.18	Full motion Mount: Wall /Ceiling Mount		
34.19	Pan: 180/360 degrees		
34.2	Tilt: -15 to +15 degrees		
34.21	Weight capacity: As per the display screen size.		
34.22	Warranty Period: As per the default warranty of the component or minimum 1 year		
	Wall/Celling Mount for existing Displays		
35.01	As per room no 2 (Not Required)		
	Smart Table Monitors	2	**12**
36.01	As per room no 2		
	HDMI Distribution Amplifier	1	**6**
37.01	As per room no 2		
	HDMI Extender (as per requirement)	2	**12**
38.01	As per room no 2		
	USB Externder (as per requirements)	2	**12**
39.01	As per room no 2		
	Cables		
40.01	Generic Cables (Lump Sum)		
	24U Rack	1	**6**
41.01	As per room no 2		
	Note: If required, computer system will be used from exisitng hardware for VC and Live Streaming Solution control/monitor or any other devices required, may be addedd to the BOQ sheet, one camera in each room will be used from existing hardware		

	Room No 9, 10 and 11		
	PTZ Camera (with mount)	2	6
42.01	As per room no 2		
	Gooseneck Microphones (with stand for Hon'ble Bench)	1	3
43.01	As per room no 2		
	Gooseneck Microphones (with stand for advocates)	2	6
44.01	As per room no 2		
	Speakers	2	6
45.01	As per room no 2		
	Ampifier & Digital Signal Processor	1	3
46.01	As per room no 2		
47.01			
	Displays		0
48.01	As per room no 2 (Already Present)		
	Wall/Celling Mount for exisitng Display	2	**6**
49.01	As per room no 2		
	Wall/Celling Mount for exisitng Display		
50.01	As per room no 2 (not Required)		
	Smart Table Monitors	2	6
51.01	As per room no 2		
	HDMI Distribution Amplifier	1	6
52.01	As per room no 2		

	HDMI Extender (as per requirements)	2	6
53.01	As per room no 2		
	USB Extender (as per requirements)	2	6
54.01	As per room no 2		
	Cables		
55.01	Generic Cables (Lump Sum)		
	Computer System/Codec/similar		
56.01	As per room no 2		
	24U Rack	1	6
57.01	As per room no 2		
	Note: If required, computer system will be used from exisitng hardware for VC and Live Streaming Solution control/monitor or any other devices required, may be addedd to the BOQ sheet, one camera in each room will be used from existing hardware		
	Room No 12		
	PTZ Camera (with mount)		**2**
58.01	As per room no 2		
	Gooseneck Microphones (with stand for Hon'ble Bench)		**1**
59.01	As per room no 2		
	Gooseneck Microphones (with stand for advocates)		**2**
60.01	As per room no 2		
	Speakers		2
61.01	As per room no 2		
	Ampifier & Digital Signal Processor		1

62.01	As per room no 2		
63.01			
	Displays		0
64.01	As per room no 2		
	Wall/Celling Mount for exisitng Display		2
65.01	As per room no 2		
	Wall/Celling Mount for exisitng Display		
66.01	As per room no 2		
	Smart Table Monitors		2
67.01	As per room no 2		
	HDMI Distribution Amplifier		1
68.01	As per room no 2		
	HDMI Extender (as per requirements)		2
69.01	As per room no 2		
	USB Extender (as per requirements)		2
70.01	As per room no 2		
	Cables		
71.01	Generic Cables (Lump Sum)		
	Computer System/Codec/similar		1
72.01	As per room no 2		
	24U Rack		1
73.01	As per room no 2		

	Note: If required, computer system will be used from exisitng hardware for VC and Live Streaming Solution control/monitor or any other devices required, may be addedd to the BOQ sheet, one camera in each room will be used from existing hardware		
	Video Backup Server		1
74.01	Total Capacity: 30 TB usable storage space or higher.		
74.02	Drive Type: Enterprise-grade SATA or SAS HDDs, with each drive having a minimum of 4 TB capacity.		
74.03	Redundancy: RAID 6 or RAID 10 for redundancy and fault tolerance.		
	Processor		
74.04	Type: Dual Intel Xeon Scalable processors or equivalent.		
74.05	Cores: Minimum 16 cores per processor.		
74.06	Clock Speed: Minimum 2.6 GHz.		
	Memory		
74.07	Total Memory: Minimum 64 GB ECC DDR4 RAM, expandable up to 256 GB.		
74.08	Type: ECC (Error-Correcting Code) for data integrity.		
	Networking		
	Network Interface Cards (NICs):		
74.09	Primary: Dual 10 Gigabit Ethernet ports.		
74.1	Secondary: Additional dual 1 Gigabit Ethernet ports for management and redundancy.		
	Connectivity		
74.11	USB Ports: Minimum 4 USB 3.0 ports.		
74.12	External Connectivity: Support for external storage and backup via USB 3.0 and eSATA ports.		
	Operating System		
74.13	OS Support: Compatible with Windows Server, Linux, or a specialized NAS operating system like FreeNAS or Unraid		
74.14	License: Appropriate licenses for operating system and any backup software.		
	Backup and Recovery		
74.15	Backup Software: Pre-installed with enterprise-grade backup software supporting incremental, differential, and full backups		

74.16	Cloud Integration: Support for cloud backup integration (AWS, Azure, Google Cloud).		
	Security		
74.17	Encryption: Support for AES-256 encryption for data at rest		
74.18	Access Control: Role-based access control (RBAC) and integration with Active Directory (AD).		
74.19	Antivirus: Built-in or compatible with leading antivirus solutions.		
	Power Supply		
74.2	Redundant Power Supplies: Dual hot- swappable power supplies, 750W each.		
74.21	Power Consumption: Energy-efficient with power management features.		
	Cooling		
74.22	Cooling System: Redundant cooling fans with dynamic fan speed control.		
74.23	Temperature Monitoring: Sensors for monitoring and alerting on temperature thresholds.		
	Form Factor		
74.24	Rack-Mountable: 2U or 4U rack-mountable chassis.		
74.25	Rails: Included with adjustable mounting rails for standard 19-inch server racks.		
	Expansion		
74.26	Drive Bays: Minimum 12 hot-swappable 3.5" drive bays.		
74.27	PCIe Slots: Minimum 2 free PCIe 3.0 slots for future expansion.		
	Management		
74.28	Remote Management: Integrated IPMI 2.0 or equivalent for remote management and monitoring.		
74.29	Console: Dedicated console port for direct management.		
74.3	Warranty: Minimum 3-year comprehensive warranty with 24/7 support.		
	Additional Features		
74.31	Snapshot Support: Ability to take and manage storage snapshots.		
74.32	Deduplication and Compression: Support for data deduplication and compression to optimize storage usage.		
74.33	Alerts and Monitoring: Built-in monitoring and alerting system for hardware and software issues.		
	Display Monitors (with stand)		1

75.01	1. Resolution: 1920 x 1080 pixel's resolution or higher		
75.02	2. Aspect Ratio: 16:9 widescreen format.		
75.03	3. Screen Size: 23 Inch or higher.		
75.04	4. Brightness and Contrast: Brightness: Typically ranges from 250 to 350 cd/m^2 for indoor use.		
75.05	5. Contrast Ratio: Standard contrast ratios of 1000:1 or higher for vivid image quality.		
75.06	6. Response Time: Typical Response Time: 8ms or lower		
75.07	7. Viewing Angles: Horizontal/Vertical Viewing Angles: Wide viewing angles (typically 178 degree's horizontal and vertical) for clear visibility from different positions.		
75.08	8. Colour Depth: Colour Support: 16.7 million colours (8-bit) for accurate colour representation.		
75.09	9. Refresh Rate: Standard Refresh Rate: 60Hz, suitable for most general-purpose applications.		
75.1	10. Connectivity: HDMI, USB, Ethernet LAN (RJ-45), Audio Out Stereo Mini Jack, Wi-Fi, Bluetooth.		
75.11	11. Panel Type: Technology: LED-backlit LCD panel for energy efficiency and vibrant colours.		
75.12	12. IPS (In-Plane Switching) or TN (Twisted Nematic): Depending on the model, IPS for better colour accuracy and wider viewing angles, or TN for faster response times.		
	Power Specifications:		
75.13	1. Power Consumption: Energy-efficient with power management features.		
75.14	2. Power Supply: Supports standard AC mains power (110V/220V/ or above, 50/60Hz).		
75.15	3. Connectivity Options:		
75.16	4. Video Inputs: HDMI, DisplayPort for versatile connectivity to various devices.		
75.17	5. Audio: Built-in speakers or audio-out ports for connecting external speakers or headphones.		
75.18	6. Full motion Mount: Wall /Ceiling Mount		
75.19	7. Pan: 180/360 degrees		
75.2	8. Tilt: -15 to +15 degrees		
75.21	9. Weight capacity: As per the display screen size.		

75.22	10. Warranty Period: As per the default warranty of the component or minimum 1 year		
76.01	**VC Solution License (Perpetual/recurring/yearly)**		1
76.01	The platform should be compatible and able to connect multiple participants from various locations using video and audio on demand using PCs, Laptops, Mac, Mobile devices such as Android, iPhone, iPad and must offer cross-platform functionality, ensuring seamless operationacross various operating systems including Windows, Linux, and macOS, should ensure optimal browser compatibility, enabling access to Hybrid Video Conferencing through modern web browsers without extra plugins		
76.02	The proposed Hybrid Video Conferencing solution must support Full HD video quality and must be fully compatible with legacy Hybrid Video Conferencing systems using H.323/SIP and WebRTC protocols and offer server-side video and audio recording, secure storage, and MP4 playback.		
76.03	The platform should have a support to multiple users like (court officials and technical person) they can add the features like Delayed Live Stream, Face Masking in the live streaming content, Sound Distortion, Pause the stream or show custom images for events like “dictation in progress” with no audio and video of each courtroom as per rules, controlled and managed from Dedicated Control Room.		
76.04	The platform should have the capability to Integrate with the court Case Information System(CIS) and be Scalable to support all courts in the state, High court/District Court/Other courts can be under one roof if required.		
76.05	The platform should secure video conference access with multi-factor authentication (MFA), SSO, using email, SMS codes, or authenticator apps, to prevent unauthorized entry.		
76.06	The platform should support SSO integration, compatible with India's PARICHAY and AADHAAR frameworks, allowing government officials to access the platform with existing credentials, streamlining logins and enhancing security through established identity verification		
76.07	The platform should support Live streaming to RTMP-based platforms and must be compatible with major video codecs.		
76.08	The platform must support a document camera as a secondary video source, enabling live sharing of physical documents inside the virtual source, enabling live sharing of physical documents inside the virtual rooms and support integrated webinars/VC and		

	RTMP streaming for realtime broadcasts to larger audiences or external platforms.		
76.09	User-friendly interface with role-based access control with intuitive admin dashboard to analyse the entire process from the backend and Rolebased feature settings can be modified from the admin panel.		
76.1	The Platform should provide the complete access log of the different users with extended reports including IP/ Device details/ Application details should be provided with each meeting room.		
76.11	The platform should support end-to-end (E2E) encrypted messaging and platform communications must use SSL encryption for data integrity and confidentiality in transit, and Elliptic Curve Cryptography (ECC) / RSA (Rivest–Shamir–Adleman) / AES 256-bit encryption to secure stored Data		
76.12	Should also be equipped with advanced security features to safeguard sensitive communications and data, adhering to the highest standards of data privacy and security protocols.		
76.13	The platform should feature a multilingual user interface expansion with enhanced capabilities for multilingual transcription and translation, supporting (Hindi and English).		
76.14	The platform may have a provision to broadcast Live Stream content on specific URL/Domain in addition to Social Media Streaming Platforms like (You Tube, Facebook, etc.).		
76.15	Platform should be robust and flexible, capable of adapting to future technological advancements and expanding user base.		
76.16	It is assumed that the features related to live streaming, pause, video content manipulation and features as per rules are integrated in Hybrid VC Solution, if any other component is required for the above-mentioned features, please specify.		

IMPORTANT NOTE FOR ALL PROSPECTIVE BIDDERS:

1. The successful bidder would be required to initially install the setup for Hybrid Video Conferencing & Live Streaming Solution in one room only on pilot basis during non-working days/after working hours within a week and after satisfaction of the Authorities of the IIT Mandi iHub, the setup for rest of the rooms will be done within 30 days or as per the directions of Authorities.
2. The cost of Hybrid VC and Live Streaming Solution should also include complete installation charges such as cabling, installation of LAN Ports, LAN wiring and any other work related to installation/setup etc.
3. Quantity can be increased/decreased at the discretion of at any point of time.
4. Any other component either (hardware or software) essential for Hybrid Video Conference and live streaming Solution that is not already mentioned in the above list (e.g. video mixer, touch panels, USB/HDMI splitters or any other component) may also be included in the BOQ sheet in "any other components cost" column, separated by comma for multiple components, keeping in view the other connected components compatibility, the number of rooms and size of each room.
5. Ensure the mount can support the weight of the displays, monitor's and speaker's.
6. Ensure HDMI Distribution Amplifier should be compatible with the existing VC setup HD Display Screens (i.e. 43 inches and 32 inches)
7. Computer systems for technical personnel in DCR will be used from existing 10 Mini PC's currently in use for Hybrid Video Conferencing.
8. Computer systems for the technical staff in the Dedicated Control Room (DCR) will be used to modify the live streaming content within the fixed delay time, add custom images or text to the live feed as needed, and monitor the content being streamed to ensure compliance with regulations.
9. The Hybrid Video Conference and Live Streaming Solution will also include the setup and installation of LAN ports, LAN cables, power points, and any other necessary infrastructure in the Dedicated Control Room (DCR) and each room.

ELIGIBILITY CRITERIA FOR BIDDERS

1. Tenderer should provide an escalation matrix for their sales & support function. The tenderer must have a strong telephone/web-based customer care cell and complaint registration mechanism.
2. A copy of the Registration number of the firm with attested copies of Articles of Association (in case of Registered Company), Byelaws and certificates of registration (in case of registered co-operative society), partnership deed (in case of partnership firm) should be submitted. Proprietorship establishments need to submit a PAN Card and other valid licenses/registration certificates. The bidder must have been in existence for the last 3 years.
3. The tenderer shall have to attach the details of its Company in the format as per Annexure-A.
4. The tenderer must attach OEM authorization form as per Annexure-E (Authorization to be taken from the hardware OEM). The tenderer also must provide the official email ID of the OEM for verification of MAF.
5. The Certificate in Annexure-B from the Company Secretary or the Managing Director in respect of the Company and from the Managing Partner in respect of a firm and from the Proprietor in

the case of a proprietorship concern to the effect that the bidder is not currently blacklisted by any Government organization/agency in India or abroad in last 3 years.

6. The commercial proposal submission form (On Bidder's letter head) as per Annexure-C is also required to be uploaded with the Technical Bid.
7. The tenderer must have a turnover of Rs. 10 Crore consolidated for the last three financial years and a certificate to this effect duly issued by a Chartered Accountant must be annexed with Annexure-A.
8. The tenderer must be an income tax assessed for the last three financial years and copies of income tax returns for three financial years must be submitted with Annexure-A.
9. The Tenderer shall attach the documents (if any) in support of any experience in supply and installation/setup of tendered product or about any experience in supply and installation/setup of similar or other item to Government Departments.

COMMERCIAL / FINANCIAL BID

1. The commercial bid must specify the rate for the supply, installation, and technical support or any other charges including GST for the Hybrid VC and Live Streaming Solution.
2. The commercial bid must contain a clear stipulation that the warranty would be comprehensive onsite as per Technical Offer form (Annexure-F).
3. The commercial bid must be submitted in the BoQ Sheet format available with the uploaded tender documents in Annexure-G.
4. The rates approved after calling tender shall remain valid for the period of 6 (Six) months from the date of issue of supply order, so that the hardware may be purchased as per the additional future requirement.

TERMS AND CONDITIONS

1. The instructions for bidders on how to submit the bid is available on the website https://www.ihubiitmandi.in/tender/
2. The bid is non-transferable.
3. It is reiterated that Purchaser's decision regarding Bidder's eligibility will be final and binding on all the Bidders.
4. The Bidders are expected to examine all instructions, forms, terms and specifications in the bidding Documents. Failure to furnish all the information required in the bidding documents submission of a Bid not substantially responsive to the bidding documents in every respect, shall be at the Bidder's risk and may result in rejection of the Bid. The Bid is liable to be rejected outright without any intimation to the Bidder, if complete information as called for in the Tender Document is not given therein or if any particulars asked for in the Forms/ proforma in the Tender are not fully furnished.
5. The Bids shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the Bidder, in which case, such corrections shall be initialled by the person or persons signing the Bid in original.
6. The Technical Bid shall be complete in all respects and contain all information asked for, except prices. It shall not contain any price information.
7. The responses should be submitted at email id: Mansi@ihubiitmandi.in and Avnish@ihubiitmandi.in.

Amendment of Tender Document

1. The IIT Mandi iHub and HCi Foundation may, at its discretion, extend the deadline for submission of Bids by amending the Tender Document. In such a case, all rights and obligations of the Tender Issuer and Bidder, subject to the deadline will thereafter be subject to the deadline as extended.
2. At any time prior to the submission of Bids, the Tendering Authority may, for any reason, whether on its own initiative or in response to a clarification requested by a prospective Bidder, modify, change, incorporate or delete certain conditions in the Tender Document.
3. The corrigendum regarding amendments, if any, shall be published on e-procurement website i.e. https://www.ihubiitmandi.in/tender/. Bidders are advised to periodically browse/ check this website to find out any further Corrigendum/ Addendum/ Notice published with respect to this Tender. All such amendments shall be binding on them.

Opening of Bid

Bids shall be opened by the Tendering Authority and the same will be conveyed through the email.

Evaluation of Bids

1. The Tender Evaluation Committee constituted by the IIT Mandi iHub and HCi Foundation, shall evaluate the Tenders. The decision of the Evaluation Committee in the evaluation of the Technical Bids and Commercial Bids shall be final. No correspondence will be entertained outside the process of negotiation/ discussion with the Committee.
2. Only technically qualified Bids will be processed for Financial/ Commercial Evaluation.
3. IIT Mandi iHub and HCi Foundation may call any or all Bidders for negotiation.
4. IIT Mandi iHub and HCi Foundation may waive any minor informality or non-conformity or irregularity in a Bid.

Award of Contract

1. **Award Criteria:** IIT Mandi iHub and HCI Foundation will award the Contract to the successful Bidder, on the basis of techno-commercial evaluation and it will not be binding upon the IIT Mandi iHub, to accept the lowest Bid. IIT Mandi iHub and HCI Foundation reserves the right to award Contract to one or more Bidders.
2. **Right to Accept/ Reject any Bid or all Bids:** IIT Mandi iHub and HCI Foundation reserves the right to accept or reject any Bid and to annul the Bidding process and reject all Bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for Tendering Authority's action.
3. **Notification of Award:** Prior to the expiration of the period of Bid validity, Tendering Authority will issue Purchase/ Supply order to the successful bidder in writing and the same shall be presumed as award of Contract. The notification of award will constitute the formation of the Contract. The successful tenderer has to enter into a comprehensive agreement with IIT Mandi iHub and HCi Foundation, Terms and Conditions specified in the Tender Document shall become the part and parcel of the Contract Document. The agreement shall be executed within 15 days of issuance of the Purchase Order.

PROOF OF CONCEPT (POC):

1. The technically qualified L1 bidder may be required to initially deploy the solution as Proof of Concept (POC) in one of the Hon'ble Rooms in the real-time environment within 10 Days from the date of POC Letter confirmation as per directions of the Hon'ble Authorities. After the satisfaction of the Hon'ble Authorities, further process with regard to award of contract/ placing the purchase order would take place.
2. If technically qualified L1 bidder fails to deploy the proof of concept to the satisfaction of the Hon'ble Authorities, technically qualified L2, L3 bidders may be asked for POC as per the directions of the Hon'ble Authorities.

Delivery and Installation:

1. The vendor has to deliver and complete the installation/setup of Hybrid VC & Live Streaming Solution within 30 days of issuance of purchase/ supply order. The vendor has to supply and install the complete solution at Shimla, Himachal Pradesh.
2. The Vendor has to provide the training related to Hybrid Video Conferencing and Live Streaming Solution to the Technical staff.

Payment terms and conditions:

The terms and conditions for making the payment shall be 50% Advance, 25% on Delivery and final 25% on completion of the project including the training, certified by the IIT Mandi iHub and HCi Foundation authorities.

Warranty

1. The Hybrid VC & Live Streaming Solution should have on site comprehensive warranty support service from the date of installation.
2. The vendor should fulfil following conditions during warranty period:

Vendor would provide the help-desk support services through telephone/ e-mail where users can lodge their complaint during Minimum 1-year comprehensive warranty period, any failure in the quoted Items, Components should be attended within maximum period of 1 working day and should be rectified within maximum of 5 days from the date of lodging of the complaint by providing the standby hardware item so that work of room should not hamper.

Penalty:

1. **Failure in maintaining the delivery and installation schedule** - 0.5% (Zero point five percent) per day subject to maximum of 15 days on the Purchase Order Value, thereafter the IIT Mandi iHub and HCI Foundation holds the option for cancellation of the Order and re-procure the same from any other Vendor at the cost of the supplier.
2. **Maintenance during warranty period** - During the warranty period any failure in the equipment supplied/ any accessories thereof should be attended within maximum of One (1) working day and should be rectified within maximum period of Five (5) working days from the date of lodging the

complaint. Thereafter penalty of 0.5% (Zero point five percent) per day on the Purchase Order. Value of impacted machine shall be imposed and if the defect in the equipment supplied/ any accessories thereof is repaired from elsewhere (in case of non-rectification of the failure within system value, will be totally replaced by the Vendor at his cost and risk within 30 days, from the date of last failure within maximum of 5 days), the tenderer shall have to pay the charges of such maintenance/repair along with the penalty or it may be recovered from the Security Amount of Performance.

3. **Replacement of the faulty system -** Any component, failing at system and subsystem level at least three times in three months, displaying chronic system design or manufacturing defects or Quality Control problem or where the penalty amount on account of downtime has crossed 15% of the system value, will be totally replaced by the Vendor at his cost and risk within 30 days, from the date of last failure.
4. **Limitation of Liability -** Taking into consideration all the above cases, the total penalty that can be levied on the Vendor shall not exceed the purchase order value.

FAILURE TO AGREE WITH THE TERMS & CONDITIONS OF THE BID/ CONTRACT

Failure of successful bidder to agree with the Terms and Conditions of the Bid/ Contract shall constitute sufficient grounds for the annulment of the award in which event; Tendering Authority may make the award to the next Best Value Bidder or call for new Bids.

Corrupt or Fraudulent Practices:

1. The Tendering Authority will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the Contract in question.
2. The Tendering Authority will declare a Bidder ineligible, either indefinitely, or for a stated period of time, to be awarded a Contract if the Tendering Authority at any time determines that the Bidder has engaged in corrupt and fraudulent practices in competing for or in executing a Contract.

Indemnity:

Bidder shall indemnify, protect and save the Tendering Authority against all claims, losses, cost damages, expenses, action suits and other proceedings, resulting from infringement of any patent, trademarks, copyrights etc. or such other statutory infringements in respect of all the Hardware and Software supplied.

Publicity:

Any publicity by the Bidder in which the name of the IIT Mandi iHub and HCI Foundation should be done only with the explicit written permission of the IIT Mandi iHub and HCI Foundation.

Latest instructions for OEMs/ Bidders:

I. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority.
II. "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated here in before, including any agency branch or office controlled by such person, participating in a procurement process.
III. "Bidder from a country which shares a land border with India" for the purpose of this Order means: -
a) An entity incorporated, established or registered in such a country; or
b) A subsidiary of an entity incorporated, established or registered in such a country; or
c) An entity substantially controlled through entities incorporated, established or registered in such a country; or
d) An entity whose beneficial owner is situated in such a country; or
e) An Indian (or other) agent of such an entity; or
f) A natural person who is a citizen of such a country; or
g) A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.
IV. The beneficial owner for the purpose of (III) above will be as under:
1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.
Explanation —
a) "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent of shares or capital or profits of the company;
b) "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholder's agreements or voting agreements;
2. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;
3. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;
4. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
5. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.
V. An Agent is a person employed to do any act for another, or to represent another in dealings with third The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority person.

Annexure A: DETAILS OF TENDERER

S.No	Particulars	Details

1	Name of the Company	
2	Mailing Address	
3	Telephone No. & Mobile No	
4	E-Mail Id	
5	Turn-over of the Company for 2021-2022, 2022-2023 and 2023-2024.	
6	Profit of the Company 2021-2022, 2022-2023 and 2023-2024.	
7	No. of Technical Personnel Employed	
8	Whether direct manufacturer or Authorized Dealer	

Date: Authorized Signatory

Annexure-B: DECLARATION REGARDING CLEAN TRACK RECORD

To

IIT Mandi iHub and HCI Foundation
C/o Indian Institute of Technology Mandi,
North Campus, VPO Kamand,
Near Mind Tree School, District Mandi,
Himachal Pradesh, India. Pin 175075

Subject: Declaration regarding clean track record of the firm / company / proprietorship concern.

Sir,
I have carefully gone through the Terms and Conditions contained in the Tender Reference No. I hereby declare that my company/ firm/ proprietorship concern has not been debarred/ blacklisted/ penalized by any Government/ Semi Government organization in India or abroad during the last 3 years. I further certify that the competent authority in my company/ firm/ proprietorship concern has authorized me to make this declaration.

Yours Sincerely,

Name: _____

Designation: _____

Company/firm: _____

Proprietorship concern. _____

Address: _____

(Stamp & Signature)

Date:

Annexure-C: COMMERCIAL PROPOSAL SUBMISSION FORM (ON BIDDER'S LETTER HEAD)

Tender Document No. iHub/e-Tender/2025-26/001

To
IIT Mandi iHub and HCi Foundation
C/o Indian Institute of Technology Mandi,
North Campus, VPO Kamand,
Near Mind Tree School, District Mandi,
Himachal Pradesh, India. Pin 175075

Sir,
We, the undersigned, offer to undertake the work of Hybrid Video Conferencing and Live Streaming Solution mentioned in this tender.
We have uploaded the Commercial bid in the format of Bill of Quantity (BOQ) sheet on the e-procurement website i.e. https://www.ihubiitmandi.in/tender/
Our Financial Proposal shall be binding upon us up to expiration of the validity period of the proposal i.e. six months. We also understand you are not bound to accept any proposal you receive either from us or from any other person.
Methodology –
1. Our Bid shall be valid for a period of 180 days i.e. six months from the last date fixed for submission of the bids in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period and on acceptance it shall remain binding on us till the conclusion of the entire contract.
2. We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal comprehensive contract is executed.
3. We also understand that you can reject any bid without assigning any reason.
4. We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.

Yours sincerely

Name.....

In the capacity of.....

Signed.....

Duly authorized to sign the Application for and on behalf of.....

Stamp / Seal……

Date:

Annexure-D: LETTER OF ACCEPTANCE OF TERMS AND CONDITIONS

To,
IIT Mandi iHub and HCI Foundation
C/o Indian Institute of Technology Mandi,
North Campus, VPO Kamand,
Near Mind Tree School, District Mandi,
Himachal Pradesh, India. Pin 175075

Sir,

Sub: - Out Bid for _____.

With reference to our Bid, having examined and understood the instruction, terms and conditions forming part of the Bid, we hereby enclose our offer for the Hybrid Video Conferencing and Live Streaming Solution as detailed in your above referred Tender Document.
We further confirm that the Offer is in conformity with the terms and conditions as mentioned in your above referred Tender Document
We also understand that the IIT Mandi iHub and HCI Foundation, is not bound to
accept the Offer either in part or in full and the IIT Mandi iHub and HCI Foundation has right to reject the Offer in full or in part without assigning any reasons whatsoever.
We affirm that the information contained within these documents is true to the best of my knowledge and belief.
We understand and acknowledge that providing false information or documentation is a serious offense.
In the event that any document submitted by us is found to be false, misleading, or fraudulent at any stage of the tender process or during the execution of the contract, we accept that it may result in the immediate disqualification of my bid, termination of any resulting contract, and possible legal action as deemed appropriate by your organization.

Yours Faithfully,

Authorized Signatories,
(Name & Designation, Seal of the Firm)

Date: _____

Annexure-E: OEM Authorization Form

Ref. No. _____ Date: _____

To
IIT Mandi iHub and HCI Foundation
C/o Indian Institute of Technology Mandi,
North Campus, VPO Kamand,
Near Mind Tree School, District Mandi,
Himachal Pradesh, India. Pin 175075

Subject: Tender reference No.

Sir,

Please refer to your Notice Inviting Tenders for supply and installation/setup of Hybrid Video Conference and Live Streaming Solution in the office of IIT Mandi iHub, Shimla, Himachal Pradesh. M/S _____ (Bidder), who is our reliable distributor/ partner for the last _____years, is hereby authorised to quote on our behalf for the subject mentioned tender.
M/S _____ (Bidder) is likely to continue as our business partner during years to come.

We undertake the following regarding the supply and installation/setup of Hybrid Video Conference and Live Streaming Solution as directed by IIT Mandi iHub in Himachal Pradesh as described in the said tender:

We confirm that the product(s) quoted are not "end of life or end of sale products" as on Bid Submission date. If in case the support for the product quoted has been stopped/ withdrawn till the time of delivery of equipment, the same will be changed with the equivalent or superior product at no extra cost.

We also undertake that the support including spares, patches, and upgrades for the quoted products shall be available for 7 years from the signing of contract.

Yours faithfully,

(Name of Manufacturer)

Note: This letter of authority should be on the letter head of the manufacturer and should be signed by a person competent and having Authorization Letter to bind the manufacturer. It should be included by the Bidder in its bid.

Annexure-F: TECHNICAL OFFER FORM

S No	Specifications	Compliance Y/N	Offered Specifications
	Room 1		
1	**PTZ Camera (with Mount) (Facing towards Hon'ble Bench)**		
1.01	Resolution: 1920 x 1080 px or higher		
1.02	Zoom: 15 x Optical or higher.		
1.03	PTZ: +/- 170° Pan and +/-30 Tilt or higher		
1.04	Output Ports Supported: USB/HDMI		
1.05	Control: Remote Control (IR), Web Client /PC Client		
1.06	Power: Runs on PoE+ or DC Power		
1.07	IP Streaming: H.264/ H.265/ RTMP & RTMPS/ RTP/ RTSP/ SRT/ TCP or equivalent		
1.08	Comprehensive On-Site Warranty: 1 Year or as per the product warranty.		
1.09	Frame Rate: 50 fps at 50Hz or higher in all resolutions.		
1.1	Image Device: 1/2.5” CMOS or better		
1.11	Horizontal resolution: 5MP or better		
1.12	Streaming: Minimum single stream or better		
	Streaming requirement:		
1.13	Physical Layer: 10/100/1000 base TX Ethernet 17 or higher		
1.14	Protocol: Minimum TCP/IP /HTTP/ RTP/RTSP		
1.15	IP Support: Static/Dynamic or both		
1.16	Lens Type: Varifocal minimum 5-100 mm or better		
1.17	Shutter speed: 1/50–1/1000 or better		
1.18	Approvals: CE, FCC, RoHS & BIS		
1.19	Compatibility: Compatible with various Video Conferencing software (e.g., Zoom/ Microsoft Teams/ Webex or VC platform used/approved in the govt./semi govt. Organizations or any other VC platforms).		
	Adjustment Features for Wall/Ceiling mount:		
1.2	180-degree rotation for optimal camera positioning		

2	**PTZ Camera (with mount) (Facing towards Advocates)**		
2.01	Resolution: 1920 x 1080 px or higher.		
2.02	Zoom: 10x Optical or higher.		
2.03	PTZ: +/- 170° Pan and +/-30 Tilt or higher		
2.04	Output Ports Supported: USB/HDMI		
2.05	Remote Control: Remote Control (IR), Web Client /PC Client		
2.06	Power: Runs on PoE+ or DC Power		
2.07	IP Streaming: H.264/ H.265/ RTMP & RTMPS/RTP/ RTSP/ SRT/ TCP por equivalent		
2.08	Frame Rate: 50 fps at 50Hz or higher in all resolutions.		
2.09	Comprehensive On-Site Warranty: 1 Year or as per the product warranty		
2.1	Image Device: 1/2.5” CMOS or better		
2.11	Horizontal resolution: 5MP or better		
2.12	Streaming: Minimum single stream or better		
	Streaming requirement:		
2.13	Physical Layer: 10/100/1000 base TX Ethernet 17 or higher		
2.14	Protocol: TCP/IP /HTTP/ RTP/ RTSP or equivalent		
2.15	IP Support: Static/Dynamic or both		
2.16	Lens Type: Varifocal minimum 5-100 mm or better		
2.17	Shutter speed: 1/50–1/1000 or better		
2.18	Approvals: CE, FCC, RoHS & BIS		
2.19	Compatibility: Compatible with various Video Conferencing software (e.g., Zoom/ Microsoft Teams/ Webex or VC platform used/approved in the govt./semi govt. Organizations or any other VC platforms).		
	Adjustment Features for Wall/Ceiling mount:		
2.2	180-degree rotation for optimal camera positioning		
3	**Wired Gooseneck Microphone (with stand for Hon'ble Bench)**		

3.01	Microphone Type: Gooseneck Condenser Microphone		
3.02	Polar Pattern: Cardioid		
3.03	Frequency Response Range: 50 Hz to 17 - 20 kHz Sensitivity: -30 to -40 dB		
3.04	Maximum SPL tolerance: 120 -130 dB		
	Output:		
3.05	Type: Balanced XLR Output		
3.06	Flexible Gooseneck:		
3.07	Length: 18-21 inches		
3.08	Material: Durable metal alloy construction		
	Integrated Features:		
3.09	LED Indicator: High-visibility LED for microphone status (active/on/off)		
3.1	RF Rejection: Integrated RF shielding to minimize interference.		
	Shock Mount:		
3.11	Integrated shock mount to reduce handling noise and vibrations		
3.12	Compatibility: Compatible with standard DSP mixers and audio equipment		
	Power Requirements:		
3.13	Phantom Power: Requires +48V phantom power		
3.14	Comprehensive On-Site Warranty: 1 Year or as per the product warranty.		
4	**Wired Gooseneck Microphone (with stand for Advocates)**		
4.01	Microphone Type: Gooseneck Condenser Microphone		
4.02	Polar Pattern: Cardioid		
4.03	Frequency Response Range: 50 Hz to 17 - 20 kHz Sensitivity: -30 to -40 dB		
4.04	Maximum SPL tolerance: 120 -130 dB		
	Output:		
4.05	Type: Balanced XLR Output		
4.06	Flexible Gooseneck:		
4.07	Length: 30-36 inches		
4.08	Material: Durable metal alloy construction		
	Integrated Features:		
4.09	LED Indicator: High-visibility LED for microphone status (active/on/off)		

4.1	RF Rejection: Integrated RF shielding to minimize interference		
	Shock Mount:		
4.11	Integrated shock mount to reduce handling noise and vibrations		
4.12	Compatibility: Compatible with standard DSP mixers and audio equipment		
	Power Requirements:		
4.13	Phantom Power: Requires +48V phantom power		
4.14	Comprehensive On-Site Warranty: 1 Year or as per the product warranty.		
5	**Speakers (With Mount)**		
5.01	Wired Passive Speaker: Ensure compatibility with the amplifier's power output.		
5.02	Maximum SPL Tolerance: 90 dB		
	Frequency Response		
5.03	Range: 50 Hz to 17-20 kHz (+/- 3 dB)		
	Power Handling		
5.04	Continuous Power: 50W RMS		
5.05	Peak Power: 50W		
5.06	Sensitivity: ≥ 90 dB (1W/1m)		
	Drivers		
5.07	Woofer: 5.25-inch or high-performance woofer for low and mid frequencies.		
5.08	Integrated Tweeter: 1-inch compression driver or dome tweeter for high frequencies.		
	Coverage Pattern		
5.09	Horizontal Coverage: 90 degrees		
5.1	Vertical Coverage: 60 degrees		
	Inputs		
5.11	Types: Metal Binding post terminal.		
5.12	Compatibility: Allows connection from various audio sources and mixers.		
5.13	Material: Robust ABS plastic or wood		
5.14	Design: Bass reflex or sealed design for enhanced bass response.		
5.15	Wall Mount: wall mount brackets for fixed installations.		
	Connectivity and Controls		
5.16	EQ Controls: Basic EQ settings (bass, treble) for on-the-fly adjustments.		

	Protection and Reliability		
5.17	Overload Protection: Protects the speaker from damage due to excessive power.		
5.18	Thermal Protection: Prevents overheating during prolonged use.		
5.19	Short Circuit Protection: Ensures speaker safety in case of wiring faults.		
5.2	Weight: Lightweight for easy installation and handling.		
	Additional Features		
5.21	Integrated Handles: For easy transportation and setup		
5.22	Comprehensive On-Site Warranty: 1 Year or as per the product warranty.		
6	**Amplifier & Digital Signal Processor**		
	Digital Multi-Channel Amplifier:		
6.01	Channels: 4 Inputs / 2 Outputs		
6.02	Minimum Output Power: 100W RMS per channel (into 8 ohms)		
6.03	Total Harmonic Distortion (THD): Less than 0.1% at rated power		
6.04	Frequency Response Range: 50 Hz to 17-20 kHz (+/- 1 dB)		
6.05	Signal-to-Noise Ratio (SNR)		
6.06	High SNR: ≥ 90 - 110 dB		
6.07	Input Types: Pheonix Connector /RCA/6.3mm		
6.08	Output Types: Pheonix Connector / RCA		
6.09	Flexibility: Provides multiple output options for connecting to various speakers and audio systems.		
	Digital Signal Processing (DSP)		
	Functions:		
	Input and Output Channels:		
6.1	Input Channels: 8 Channels with Phoenix Connector inputs for connecting microphones and audio sources.		
6.11	Output Channels: 6 Channels with Phoenix Connector outputs for sending		

	processed audio to amplifiers, speakers, or recording equipment.		
6.12	DSP Cores: Multi-core DSP architecture with sufficient processing power to handle real-time audio processing for all 6 input and output channels simultaneously.		
6.13	Echo Cancellation: Built-in automatic echo cancellation.		
6.14	Noise Reduction: Advanced noise reduction algorithms.		
6.15	Automatic Gain Control (AGC): To maintain consistent audio levels		
6.16	Processing Capability: Capable of implementing complex audio algorithms such as EQ (Equalization), dynamics processing, and feedback suppression without introducing noticeable latency.		
	Audio Processing Features:		
6.17	EQ (Equalization): Parametric EQ with adjustable frequency bands (typically 4 to 8 bands per channel), Q factors, and gain levels.		
6.18	Dynamics Processing: Includes compressors, limiters, and expanders for managing audio dynamics.		
6.19	Feedback Suppression: Advanced algorithms for detecting and automatically suppressing feedback frequencies.		
	Audio Quality and Resolution:		
6.2	Sample Rate and Bit Depth: 24-bit/44.1kHz or 24-bit/48kHz or higher.		
6.21	Audio Latency: Low-latency audio processing to minimize delay between audio input and output.		
	Connectivity Options:		
6.22	Analog Inputs/Outputs: 6 balanced analog inputs and outputs (Balanced XLR) for direct connection to microphones, mixers, and other audio equipment.		
6.23	Digital Inputs/Outputs: Digital inputs/outputs (AES/EBU, SPDIF) for interfacing with digital audio sources and equipment or equivalent.		

6.24	Network Connectivity: Ethernet port for remote control, monitoring, and integration into networked audio systems.		
	Control and Interface:		
6.25	User Interface: Front panel controls with LCD display for intuitive navigation and real-time monitoring of input and output levels, processing status, and settings.		
6.26	Remote Control: Support for remote control via dedicated software application (e.g., webbased interface or proprietary control software).		
6.27	Presets Storage: Ability to store and recall multiple presets for different room setups or audio configurations.		
	Power Requirements:		
6.28	Power Supply: Standard AC mains power (110V/220V/ or above) or Power over Ethernet (PoE+).		
6.29	Mounting: Rack-mountable design with included mounting brackets.		
6.3	Comprehensive On-Site Warranty: 1 Year or as per the product warranty.		
7	**Display (with Mount)- 55"**		
7.01	Resolution: 1920 x 1080 pixel's resolution or higher		
7.02	Aspect Ratio: 16:9 widescreen format.		
7.03	Screen Size: 55 inches		
7.04	Brightness: 400 nits or more.		
7.05	Contrast Ratio: Standard contrast ratios of 1000:1 or higher for vivid image quality.		
7.06	Response Time: Typical Response Time: 8ms or lower.		
7.07	Viewing Angles: Horizontal/Vertical Viewing Angles: Wide viewing angles (typically 178 degree's horizontal and vertical) for clear visibility from different positions. Color Depth: Color Support: 16.7 million colors (8-bit) for accurate color representation.		
7.08	Refresh Rate: Standard Refresh Rate: 60Hz, suitable for most general-purpose applications.		

7.09	Connectivity: HDMI in port minimum 2, USB in port minimum 2, Ethernet LAN (RJ-45), Audio Out Stereo Mini Jack, Wi-Fi, Bluetooth.		
7.1	Panel Type: Technology: LED-backlit LCD panel for energy efficiency and vibrant colors.		
7.11	IPS or VA Panel or TN (Twisted Nematic): Depending on the models.		
	Power Specifications:		
7.12	Power Consumption: Energy-efficient with power management features.		
7.13	Power Supply: Supports standard AC mains power (110V/220V/ or above, 50/60Hz).		
	Connectivity Options:		
7.14	Video Inputs: HDMI, DisplayPort inputs for versatile connectivity to various devices.		
7.15	Audio: Built-in speakers or audio-out ports for connecting external speakers or headphones.		
7.16	Display Working/Operations Hours: 16X7 hours or higher.		
7.17	Full motion Mount: Wall /Ceiling Mount		
7.18	Pan: 180/360 degrees		
7.19	Tilt: -15 to +15 degrees		
7.2	Weight capacity: As per the display screen size.		
7.21	Warranty Period: As per the default warranty of the component or minimum 1 year		
8	**Smart Table Monitors (with mount for Hon'ble Bench)**		
8.01	Screen Size: 21 inches or higher (diagonal measurement).		
8.02	Resolution: Full HD (1920 x 1080 pixels)		
8.03	Panel Type: IPS (In-Plane Switching)		
8.04	Brightness: 250 cd/m^2		
8.05	Contrast Ratio: 1000:1		
8.06	Response Time: 8ms (Gray-to-Gray) or less		
8.07	Viewing Angles: 1780 horizontal/vertical		

8.08	Power Consumption: Energy-efficient with power management features.		
8.09	Connectivity: USB, HDMI, DisplayPort		
8.1	Features: Slim design, wide colour gamut		
8.11	Panel Type: LED (Light Emitting Diode) or higher, anti-glare display.		
8.12	Connectivity: HDMI, DisplayPort, USB inputs Response Time:5ms or less		
8.13	Refresh Rate: Standard 60Hz refresh rate or higher.		
8.14	Operating System: Built-in OS (such as Android or proprietary OS) for smart functionality.		
8.16	Warranty Period: As per the default warranty of the component or minimum 1 year.		
	Table Mount/Stand Design:		
8.17	Wider and Longer Arm: Support monitors from 21''-35'' with load capacity up to 12KG or higher.		
8.18	VESA Support: Support 75x75mm and 100x100mm or equivalent.		
8.19	Ergonomic Design: +85° to -30° screen tilt adjustment, 360° rotations for landscape or portrait mode; Upright lift 9.8" (250mm) and +90° to -90° swivel.		
8.2	Easy Installation: C-clamp or Grommet hole installation or equivalent.		
9	**HDMI Distribution Amplifier**		
9.01	Configuration: 1 input, 4 outputs (1x4)		
9.02	HDMI Input: 1 x HDMI Type A (19-pin)		
9.03	HDMI Outputs: 4 x HDMI Type A (19-pin)		
9.04	Resolution Support: Up to 4K (3840 x 2160 pixels) at 60Hz		
9.05	Supported Formats: Full HD (1920 x 1080 pixels), Ultra HD or higher.		
9.06	HDMI Version: HDMI 2.0 or higher		
9.07	Colour Depth: Supports 8-bit, 10-bit, and 12-bit Deep Colour.		
9.08	Audio Pass-through: Supports audio passthrough to all outputs.		
9.09	HDCP Version: HDCP 2.2 compliant or higher		

9.1	Backward Compatibility: HDCP 1.4 compatible		
9.11	EDID Management: Supports EDID management for compatibility with different displays		
9.12	CEC Pass-through: Consumer Electronics Control (CEC) pass-through support		
9.13	Power Supply: DC/External DC/inbuilt AC or generic		
9.14	Input Voltage: 100-240V AC, 50/60Hz		
9.15	Output Voltage: 5V DC or 12V DC.		
9.16	Power Consumption: Energy-efficient with power management features.		
	Physical and Environmental Specifications:		
9.17	Operating Temperature: 0°C to 40°C (32°F to 104°F)		
9.18	Storage Temperature: -20°C to 60°C (-4°F to 140°F)		
9.19	Humidity: 20% to 90% RH (non-condensing)		
9.2	Mounting: Rack-mountable design with included mounting brackets.		
9.21	LED Indicators: Power, signal status for each output		
9.22	Firmware Upgradable: Via USB or network connection		
9.23	Signal Amplification: Built-in signal amplification for extended cable lengths.		
9.24	Remote Control: IR remote control or webbased management interface or RS232 and Ethernet		
9.25	Warranty Period: As per the default warranty of the component or minimum 1 year.		
10	**HDMI Extender (As per requirement)**		
10.01	Compatibility: HDMI 1.4, HDMI 2.0 or better		
	Maximum Distance:		
10.02	Over CAT6: Up to 70 meters (230 feet) for 1080p; up to 40 meters (131 feet) for 4K		
	Resolution Support:		
10.03	Up to 4K UHD (3840 x 2160) at 60Hz		

10.04	HDCP 2.2 compliance or higher		
	Audio Formats Supported:		
10.05	LPCM, DTS-HD Master Audio, Dolby True HD		
	Ports:		
10.06	Transmitter: 1 x HDMI input, 1 x RJ45 output		
10.07	Receiver: 1 x RJ45 input, 1 x HDMI output		
	Power Supply:		
10.08	External power adapter included		
10.09	PoE (Power over Ethernet) options available		
	Additional Features:		
10.1	EDID pass-through for seamless communication between devices		
10.11	IR pass-through for remote control extension		
10.12	LED indicators for power and link status		
	Environmental Specifications:		
10.13	Operating Temperature: 0°C to 50°C (32°F to 122°F)		
10.14	Storage Temperature: -20°C to 70°C (-4°F to 158°F)		
10.15	Humidity: 10% to 90% non-condensing		
10.16	Safety Standards: UL listed		
10.17	Warranty Period: As per the default warranty of the component or minimum 1 year.		
11	**USB Extender (As per requirements)**		
	General Specifications:		
11.01	Type: USB3.0		
11.02	Transmission Method: CAT6/7 Ethernet cables or fiber optics or other high speed cable extenders.		
	USB Extender:		
11.03	Compatibility: USB 2.0, USB 3.0 or better		
	Maximum Distance:		
11.04	Over CAT6: Up to 100 meters		
11.05	Data Transfer Rate: USB 3.0: Up to 5 Gbps		
	Ports:		
	Power Supply:		
11.06	External power adapter included		
11.07	USB-powered options available for shorter distances		

	Additional Features:		
11.08	Plug and play, no driver installation required		
11.09	LED indicators for power and data transmission status		
	Environmental Specifications:		
11.1	Operating Temperature: 0°C to 50°C (32°F to 122°F)		
11.12	Storage Temperature: -20°C to 70°C (-4°F to 158°F)		
11.14	Humidity: 10% to 90% non-condensing		
11.16	Safety Standards: UL listed		
11.18	Warranty Period: As per the default warranty of the component or minimum 1 year.		
12	**Cables**		
12.01	Generic Cables (Lump Sum)		
	Type: Tower Computer System/Desktop		
12.21	Processor: Processor x86Processor i.e. Intel i5,12000series/AMDRyzen5, 5000 series (Six Core and Twelve thread or higher), 4.4 GHz or higher turbo frequency) or better.		
12.22	Chipset: Suitable chipset for quoted processor with upgradable support.		
12.23	Memory: 8GB DDR-53200 MHz or higher expandable up to 64GB.		
12.24	Storage: 512GB SSD or higher		
12.25	Graphics Card: Integrated HD Graphics or better Graphic controller.		
12.26	Network: Integrated Gigabit Ethernet controller with RJ-45 connector, WIFI and Bluetooth 5.0 or higher.		
12.27	External Ports: 2xUSB2.0 or higher and 3xUSB 3.0 or higher ports, 1 HDMI port, 1 DP port.		
12.28	Audio: Integrated sound controller.		
12.29	Keyboard: Standard 104 Keys OEM Keyboard with Rupee Symbol and USB Interface		
12.3	Mouse: OEM Optical USB Scroll Mouse with Mousepad Display: 23” or higher		

	LCD/TFT display non-touch having FHD (1920x1080) or better resolution and TCO/BIS certified.		
12.31	Webcam: Full HD with integrated mic		
12.32	Power Management & DMI: System with Power management features & Desktop Management Interface implementation		
12.33	Power efficiency: Minimum 85%		
12.34	OS Support: Latest version of Windows 64 bit Accessories: System user manual and all other necessary accessories		
12.35	Compliance & Certifications: Complete system should be BIS registered, BEE / Energy Star certified and RoHS Complied and EPR Complied		
12.36	Stand: Standard Height adjustable		
12.37	Warranty Period: As per the default warranty of the component or minimum 1 year.		
13	**24U Rack**		
	Type and Size:		
13.01	Rack Height: 24U		
13.02	Rack Width: Standard 19-inch		
13.03	Rack Depth: Adjustable, minimum 24 inches		
13.04	Construction Material: High-quality SPCC cold-rolled steel with black powder-coated finish		
	Dimensions and Weight Capacity:		
13.05	Height: 42 inches (106.68 cm)		
13.06	Width: 23.6 inches (60 cm) outer, 19 inches (48 cm) inner		
13.07	Depth: Adjustable, minimum 24 inches (61 cm)		
13.08	Weight Capacity: Minimum 75 kg (165 lbs)		
	Note: The bidder can quote the rack with dimensions compatible with computer hardware required in the proposed solution.		
	Doors and Panels:		
13.09	Front Door: Perforated and lockable		
13.1	Rear Door: Perforated and lockable		

13.11	Side Panels: Removable with quick-release latches		
	Cooling and Ventilation:		
13.12	Pre-installed Fans: One 120mm top-mounted fan		
13.13	Ventilation: Perforated doors for passive airflow		
13.14	Optional Fans: Additional fan mounts available		
	Cable Management:		
13.15	Vertical Cable Management: Included (bars or rings)		
13.16	Horizontal Cable Management: Included (bars or rings)		
13.17	Cable Entry Points: Top and bottom with grommets grommets		
	Mounting and Rails:		
13.18	Mounting Rails: Adjustable depth, with U markings		
13.19	Compatibility: Standard 19-inch rack equipment		
13.2	Grounding: Grounding points included		
	Additional Features:		
13.21	Casters: Optional, with locking brakes		
13.22	Leveling Feet: Included		
13.23	Colour: Black		
13.24	Compliance and Standards:		
13.25	Certifications: Must comply with relevant industry standards and certifications for safety and durability.		
13.26	Warranty: Complete system with minimum Three (3) / Five (5) Years OEM on site comprehensive warranty support. MAF from OEM is a must.		
	Room 2		
14	**PPTZ Camera (with mount)**		
14.01	Resolution: 1920x1080px or higher.		
14.02	Zoom: 10x Optical or higher.		
14.03	PTZ: +/- 170° Pan and +/-30 Tilt or higher		
14.04	Output Ports Supported: USB/HDMI		

14.05	Control: Remote Control (IR), Web Client /PC Client.		
14.06	Power: Runs on PoE+ or DC Power		
14.07	IP Streaming: H.264/ H.265/ RTMP & RTMPS/ RTP/ RTSP/ SRT/ TCP or equivalent		
14.08	Comprehensive On-Site Warranty: 1 Year or as per the product warranty.		
14.09	Frame Rate: 50 fps at 50Hz or higher in all resolutions.		
14.1	Image Device: 1/2.5" CMOS or better		
14.11	Horizontal resolution: 5MP or better		
14.12	Streaming: Minimum single stream or better		
	Streaming requirement:		
14.13	Physical Layer: 10/100/1000 base TX Ethernet 17 or higher		
14.14	Protocol: Minimum		
14.15	IP Support: Static/Dynamic or both		
14.16	Lens Type: Varifocal minimum 5-100 mm or better		
14.17	Shutter speed: 1/50–1/1000 or better		
14.18	Approvals: CE, FCC, RoHS & BIS		
14.19	Compatibility: Compatible with various Video Conferencing software (e.g., Zoom/ Microsoft Teams/ Webex or VC platform used/approved in the govt./semi govt. Organizations or any other VC platforms).		
14.2	Adjustment Features for Wall/Ceiling mount: 180-degree rotation for optimal camera positioning		
15	**Wired Gooseneck Microphones (with stand for Hon'ble Bench)**		
15.01	Microphone Type: Gooseneck Condenser Microphone		
15.02	Polar Pattern: Cardioid		
15.03	Frequency Response Range: 50 Hz to 17 - 20 kHz Sensitivity: -30 to -40 dB		
15.04	Maximum SPL tolerance: 120 -130 dB		
	Output:		
15.05	Type: Balanced XLR Output		
15.06	Flexible Gooseneck:		
15.07	Length: 18-21 inches		

15.08	Material: Durable metal alloy construction		
	Integrated Features:		
15.09	LED Indicator: High-visibility LED for microphone status (active/on/off)		
15.1	RF Rejection: Integrated RF shielding to minimize interference		
	Shock Mount:		
15.11	Integrated shock mount to reduce handling noise and vibrations		
	Compatibility:		
15.12	Compatible with standard DSP mixers and audio equipment's		
	Power Requirements:		
15.13	Phantom Power: Requires +48V phantom power		
15.14	Comprehensive On-Site Warranty: 1 Year or as per the product warranty.		
16	**Wired Gooseneck Microphones (with stand for Advocates)**		
16.01	Microphone Type: Gooseneck Condenser Microphone		
16.02	Polar Pattern: Cardioid		
16.03	Frequency Response Range: 50 Hz to 17 - 20 kHz		
16.04	Sensitivity: -30 to -40 dB		
16.05	Maximum SPL tolerance: 120 -130 dB		
	Output:		
16.06	Type: Balanced XLR Output		
16.07	Flexible Gooseneck:		
16.08	Length: 30-36 inches		
16.09	Material: Durable metal alloy construction		
	Integrated Features:		
16.2	LED Indicator: High-visibility LED for microphone status (active/on/off)		
16.21	RF Rejection: Integrated RF shielding to minimize interference		
	Shock Mount:		
16.22	Integrated shock mount to reduce handling noise and vibrations		
	Compatibility:		

16.23	Compatible with standard DSP mixers and audio equipment's.		
	Power Requirements:		
16.24	Phantom Power: Requires +48V phantom power		
16.25	Comprehensive On-Site Warranty: 1 Year or as per the product warranty.		
16.26	(Each microphone should be able to capture clear and intelligible sound from a distance of approximately 3-5 feet.)		
	Speakers		
17.01	As per room 1		
	Amplifier & Digital Signal Processing		
18.01	Digital Multi-Channel Amplifier:		
18.02	Channels: 4 Inputs / 2 Outputs		
18.03	Minimum Output Power: 100W RMS per channel (into 8 ohms)		
18.04	Total Harmonic Distortion (THD): Less than 0.1% at rated power		
18.05	Frequency Response Range: 50 Hz to 17-20 kHz (+/- 1 dB)		
18.06	Signal-to-Noise Ratio (SNR)		
18.07	High SNR: ≥ 90 - 110 dB		
	Inputs		
18.08	Types: Pheonix Connectors /RCA/6.3mm Inputs		
	Outputs		
19.09	Types: Pheonix Connector / RCA		
19.1	Flexibility: Provides multiple output options for connecting to various speakers and audio systems.		
	Digital Signal Processing (DSP)		
	Functions:		
19.11	**Input and Output Channels:**		
19.12	Input Channels: 8 Channels with Phoenix Connector inputs for connecting microphones and audio sources.		
19.13	Output Channels: 6 Channels with Phoenix Connector outputs for sending processed audio to amplifiers, speakers, or recording equipment.		
19.14	DSP Cores: Multi-core DSP architecture with sufficient processing power to		

	handle real-time audio processing for all 6 input and output channels simultaneously.		
19.15	Echo Cancellation: Built-in automatic echo cancellation.		
19.16	Noise Reduction: Advanced noise reduction algorithms.		
19.17	Automatic Gain Control (AGC): To maintain consistent audio levels		
19.18	Processing Capability: Capable of implementing complex audio algorithms such as EQ (Equalization), dynamics processing, and feedback suppression without introducing noticeable latency.		
19.19	**Audio Processing Features:**		
19.2	EQ (Equalization): Parametric EQ with adjustable frequency bands (typically 4 to 8 bands per channel), Q factors, and gain levels.		
19.21	Dynamics Processing: Includes compressors, limiters, and expanders for managing audio dynamics.		
	Feedback Suppression: Advanced algorithms for detecting and automatically suppressing feedback frequencies.		
19.22	**Audio Quality and Resolution:**		
19.23	Sample Rate and Bit Depth: 24-bit/44.1kHz or 24-bit/48kHz or higher.		
19.24	Audio Latency: Low-latency audio processing to minimize delay between audio input and output.		
19.25	**Connectivity Options:**		
19.26	Analog Inputs/Outputs: 6 balanced analog inputs and outputs (Balanced XLR) for direct connection to microphones, mixers, and other audio equipment.		
19.27	Digital Inputs/Outputs: Digital inputs/outputs (AES/EBU, SPDIF) for interfacing with digital audio sources and equipment or equivalent.		
	Network Connectivity: Ethernet port for remote control, monitoring, and integration into networked audio systems.		

19.28	**Control and Interface:**		
19.29	User Interface: Front panel controls with LCD display for intuitive navigation and real-time monitoring of input and output levels, processing status, and settings.		
19.3	Remote Control: Support for remote control via dedicated software application (e.g., webbased interface or proprietary control software).		
	Presets Storage: Ability to store and recall multiple presets for different room setups or audio configurations.		
19.31	Power Requirements:		
19.32	Power Supply: Standard AC mains power (110V/220V/ or above) or Power over Ethernet (PoE+).		
19.33	Mounting: Rack-mountable design with included mounting brackets.		
	Comprehensive On-Site Warranty: 1 Year or as per the product warranty.		
	Wall/Ceiling Mount for existing Display		
21.01	Full motion Mount: Wall /Ceiling Mount		
21.02	Pan: 180/360 degrees		
21.03	Tilt: -15 to +15 degrees		
21.04	Weight capacity: As per the display screen size.		
21.05	Compatibility: Compatible with existing Display		
	Smart Table Monitors		
22.01	As per room 1		
	HDMI Distribution Amplifier		
23.01	As per room 1		
	HDMI Extender (as per requirements)		
24.01	As per room 1		
	USB Extender (As per requirements)		
25.01	As per room 1		
	Cables		
26.01	As per room 1		

	Computer System/Codec/or similar		
27.01	As per room 1		
	24U Rack		
28.01	As per room 1		
	Note Displays will be used from exisitng hardware		
	Room No. 3,4,5,6, 7 and 8		
	PTZ Camera (with mount)		6
29.01	As per room 2		
	Wired Gooseneck Microphone (with stand facing towards Hon'ble Bench)		6
30.01	As per room 2		
	Wired Gooseneck Microphone (with stand facing towards Advocates)		6
31.01	As per room 2		
	Speakers		6
32.01	As per room 2		
	Amplifier & Digital Signal Processor		6
33.01	**As per** room 2		
	Display (with Mount)		
34.01	Resolution: 1920 x 1080 pixel's resolution or higher		
34.02	Aspect Ratio: 16:9 widescreen format.		
34.03	Screen Size: 32 inches		
34.04	Brightness and Contrast: Brightness: Typically ranges from 250 to 350 cd/m^2 for indoor use.		
34.05	Contrast Ratio: Standard contrast ratios of 1000:1 or higher for vivid image quality.		
34.06	Response Time: Typical Response Time: 8ms or lower.		
34.07	Viewing Angles: Horizontal/Vertical Viewing Angles: Wide viewing angles (typically 178 degree's horizontal and		

	vertical) for clear visibility from different positions.		
34.08	Colour Depth: Colour Support: 16.7 million colours (8-bit) for accurate colour representation.		
34.09	Refresh Rate: Standard Refresh Rate: 60Hz, suitable for most general-purpose applications.		
34.1	Connectivity: HDMI in port minimum 2, USB in port minimum 2, Ethernet LAN (RJ-45), Audio Out Stereo Mini Jack, Wi-Fi, Bluetooth		
34.11	Panel Type: Technology: LED-backlit LCD panel for energy efficiency and vibrant colours.		
34.12	VA Panel or IPS (In-Plane Switching) or TN (Twisted Nematic): Depending on the model,		VA Panel
	Power Specifications:		
34.13	Power Consumption Energy-efficient with power management features.		
34.14	Power Supply: Supports standard AC mains power (110V/220V/ or above, 50/60Hz).		
	Connectivity Options:		
34.15	Video Inputs: HDMI, DisplayPort inputs for versatile connectivity to various devices.		
34.16	Audio: Built-in speakers or audio-out ports for connecting external speakers or headphones.		
34.17	Display Working/Operations Hours: 16X7 hours or higher.		
34.18	Full motion Mount: Wall /Ceiling Mount		
34.19	Pan: 180/360 degrees		
34.2	Tilt: -15 to +15 degrees		
34.21	Weight capacity: As per the display screen size.		
34.22	Warranty Period: As per the default warranty of the component or minimum 1 year		
	Wall/Celling Mount for existing Displays		
35.01	As per room 2 (Not Required)		

	Smart Table Monitors		6
36.01	As per room 2		
	HDMI Distribution Amplifier		6
37.01	As per room 2		
	HDMI Extender (as per requirement)		6
38.01	As per room 2		
	USB Externder (as per requirements)		6
39.01	As per room no 2		
	Cables		
40.01	Generic Cables (Lump Sum)		
	24U Rack		6
41.01	As per room 2		
	Note: If required, computer system will be used from exisitng hardware for VC and Live Streaming Solution control/monitor or any other devices required, may be addedd to the BOQ sheet, one camera in each room will be used from existing hardware		
	Room No 9, 10 and 11		
	PTZ Camera (with mount)		3
42.01	As per room 2		
	Gooseneck Microphones (with stand for Hon'ble Bench)		3
43.01	As per room 2		
	Gooseneck Microphones (with stand for advocates)		3
44.01	As per room 2		
	Speakers		3
45.01	As per room 2		
	Ampifier & Digital Signal Processor		3

46.01	As per room 2		
47.01			
	Displays		
48.01	As per room 2 (Already Present)		
	Wall/Celling Mount for exisitng Display		3
49.01	As per room 2		
	Wall/Celling Mount for exisitng Display		
50.01	As per room 2 (not Required)		
	Smart Table Monitors		3
51.01	As per room 2		
	HDMI Distribution Amplifier		3
52.01	As per room 2		
	HDMI Extender (as per requirements)		3
53.01	As per room 2		
	USB Extender (as per requirements)		3
54.01	As per room 2		
	Cables		
55.01	Generic Cables (Lump Sum)		
	Computer System/Codec/similar		
56.01	As per room 2		
	24U Rack		3
57.01	As per room 2		
	Note: If required, computer system will be used from exisitng hardware for VC and Live Streaming Solution control/monitor or any other devices required, may be addedd to the BOQ sheet, one camera in each room will be used from existing hardware		
	Room No 12		

	PTZ Camera (with mount)		
58.01	As per room 2		
	Gooseneck Microphones (with stand for Hon'ble Bench)		
59.01	As per room 2		
	Gooseneck Microphones (with stand for advocates)		
60.01	As per room 2		
	Speakers		
61.01	As per room 2		
	Ampifier & Digital Signal Processor		
62.01	As per room 2		
63.01			
	Displays		
64.01	As per room 2		
	Wall/Celling Mount for exisitng Display		
65.01	As per room 2		
	Wall/Celling Mount for exisitng Display		
66.01	As per room 2		
	Smart Table Monitors		
67.01	As per room 2		
	HDMI Distribution Amplifier		
68.01	As per room 2		
	HDMI Extender (as per requirements)		
69.01	As per room 2		
	USB Extender (as per requirements)		
70.01	As per room 2		
	Cables		
71.01	Generic Cables (Lump Sum)		

	Computer System/Codec/similar		
72.01	As per room 2		
	24U Rack		
73.01	As per room 2		
	Note: If required, computer system will be used from exisitng hardware for VC and Live Streaming Solution control/monitor or any other devices required, may be addedd to the BOQ sheet, one camera in each room will be used from existing hardware		
	Video Backup Server		
74.01	Total Capacity: 30 TB usable storage space or higher.		
74.02	Drive Type: Enterprise-grade SATA or SAS HDDs, with each drive having a minimum of 4 TB capacity.		
74.03	Redundancy: RAID 6 or RAID 10 for redundancy and fault tolerance.		
	Processor		
74.04	Type: Dual Intel Xeon Scalable processors or equivalent.		
74.05	Cores: Minimum 16 cores per processor.		
74.06	Clock Speed: Minimum 2.6 GHz.		
	Memory		
74.07	Total Memory: Minimum 128 GB ECC DDR4 RAM, expandable up to 256 GB.		
74.08	Type: ECC (Error-Correcting Code) for data integrity.		
	Networking		
	Network Interface Cards (NICs):		
74.09	Primary: Dual 10 Gigabit Ethernet ports.		
74.1	Secondary: Additional dual 1 Gigabit Ethernet ports for management and redundancy.		
	Connectivity		
74.11	USB Ports: Minimum 4 USB 3.0 ports.		
74.12	External Connectivity: Support for external storage and backup via USB 3.0 and eSATA ports.		
	Operating System		

74.13	OS Support: Compatible with Windows Server, Linux, or a specialized NAS operating system like FreeNAS or Unraid		
74.14	License: Appropriate licenses for operating system and any backup software.		
	Backup and Recovery		
74.15	Backup Software: Pre-installed with enterprise-grade backup software supporting incremental, differential, and full backups		
74.16	Cloud Integration: Support for cloud backup integration (AWS, Azure, Google Cloud).		
	Security		
74.17	Encryption: Support for AES-256 encryption for data at rest		
74.18	Access Control: Role-based access control (RBAC) and integration with Active Directory (AD).		
74.19	Antivirus: Built-in or compatible with leading antivirus solutions.		
	Power Supply		
74.2	Redundant Power Supplies: Dual hot-swappable power supplies, 750W each.		
74.21	Power Consumption: Energy-efficient with power management features.		
	Cooling		
74.22	Cooling System: Redundant cooling fans with dynamic fan speed control.		
74.23	Temperature Monitoring: Sensors for monitoring and alerting on temperature thresholds.		
	Form Factor		
74.24	Rack-Mountable: 2U or 4U rack-mountable chassis.		
74.25	Rails: Included with adjustable mounting rails for standard 19-inch server racks.		
	Expansion		
74.26	Drive Bays: Minimum 12 hot-swappable 3.5" drive bays.		
74.27	PCIe Slots: Minimum 2 free PCIe 3.0 slots for future expansion.		
	Management		

74.28	Remote Management: Integrated IPMI 2.0 or equivalent for remote management and monitoring.		
74.29	Console: Dedicated console port for direct management.		
74.3	Warranty: Minimum 3-year comprehensive warranty with 24/7 support.		
	Additional Features		
74.31	Snapshot Support: Ability to take and manage storage snapshots.		
74.32	Deduplication and Compression: Support for data deduplication and compression to optimize storage usage.		
74.33	Alerts and Monitoring: Built-in monitoring and alerting system for hardware and software issues.		
	Display Monitors (with stand)		
75.01	1. Resolution: 1920 x 1080 pixel's resolution or higher		
75.02	2. Aspect Ratio: 16:9 widescreen format.		
75.03	3. Screen Size: 23 Inch or higher.		
75.04	4. Brightness and Contrast: Brightness: Typically ranges from 250 to 350 cd/m^2 for indoor use.		
75.05	5. Contrast Ratio: Standard contrast ratios of 1000:1 or higher for vivid image quality.		
75.06	6. Response Time: Typical Response Time: 8ms or lower		
75.07	7. Viewing Angles: Horizontal/Vertical Viewing Angles: Wide viewing angles (typically 178 degree's horizontal and vertical) for clear visibility from different positions.		
75.08	8. Colour Depth: Colour Support: 16.7 million colours (8-bit) for accurate colour representation.		
75.09	9. Refresh Rate: Standard Refresh Rate: 60Hz, suitable for most general-purpose applications.		
75.1	10. Connectivity: HDMI, USB, Ethernet LAN (RJ-45), Audio Out Stereo Mini Jack, Wi-Fi, Bluetooth.		

75.11	11. Panel Type: Technology: LED-backlit LCD panel for energy efficiency and vibrant colours.		
75.12	12. IPS (In-Plane Switching) or TN (Twisted Nematic): Depending on the model, IPS for better colour accuracy and wider viewing angles, or TN for faster response times.		
	Power Specifications:		
75.13	1. Power Consumption: Energy-efficient with power management features.		
75.14	2. Power Supply: Supports standard AC mains power (110V/220V/ or above, 50/60Hz).		
75.15	3. Connectivity Options:		
75.16	4. Video Inputs: HDMI, DisplayPort for versatile connectivity to various devices.		
75.17	5. Audio: Built-in speakers or audio-out ports for connecting external speakers or headphones.		
75.18	6. Full motion Mount: Wall /Ceiling Mount		
75.19	7. Pan: 180/360 degrees		
75.2	8. Tilt: -15 to +15 degrees		
75.21	9. Weight capacity: As per the display screen size.		
75.22	10. Warranty Period: As per the default warranty of the component or minimum 1 year		
76.01	**VC Solution License (Perpetual/recurring/yearly)**		**VC Solution License - YEARLY**
76.01	The platform should be compatible and able to connect multiple participants from various locations using video and audio on demand using PCs, Laptops, Mac, Mobile devices such as Android, iPhone, iPad and must offer cross-platform functionality, ensuring seamless operation across various operating systems including Windows, Linux, and macOS, should ensure optimal browser compatibility, enabling access to Hybrid Video Conferencing through modern web browsers without extra plugins		

76.02	The proposed Hybrid Video Conferencing solution must support Full HD video quality and must be fully compatible with legacy Hybrid Video Conferencing systems using H.323/SIP and WebRTC protocols and offer server-side video and audio recording, secure storage, and MP4 playback.		
76.03	The platform should have a support to multiple users like (room officials and technical person) they can add the features like Delayed Live Stream, Face Masking in the live streaming content, Sound Distortion, Pause the stream or show custom images for events like “dictation in progress” with no audio and video of each room as per rules, controlled and managed from Dedicated Control Room.		
76.04	The platform should have the capability to Integrate with the court Case Information System (CIS) and be Scalable to support all courts in the state, High court/District Court/Other courts can be under one roof if required.		
76.05	The platform should secure video conference access with multi-factor authentication (MFA), SSO, using email, SMS codes, or authenticator apps, to prevent unauthorized entry.		
76.06	The platform should support SSO integration, compatible with India's PARICHAY and AADHAAR frameworks, allowing government officials to access the platform with existing credentials, streamlining logins and enhancing security through established identity verification		
76.07	The platform should support Live streaming to RTMP-based platforms and must be compatible with major video codecs.		
76.08	The platform must support a document camera as a secondary video source, enabling live sharing of physical documents inside the virtual source,		

	enabling live sharing of physical documents inside the virtual rooms and support integrated webinars/VC and RTMP streaming for realtime broadcasts to larger audiences or external platforms.		
76.09	User-friendly interface with role-based access control with intuitive admin dashboard to analyse the entire process from the backend and Rolebased feature settings can be modified from the admin panel.		
76.1	The Platform should provide the complete access log of the different users with extended reports including IP/ Device details/ Application details should be provided with each meeting room.		
76.11	The platform should support end-to-end (E2E) encrypted messaging and platform communications must use SSL encryption for data integrity and confidentiality in transit, and Elliptic Curve Cryptography (ECC) / RSA (Rivest–Shamir–Adleman) / AES 256-bit encryption to secure stored Data		
76.12	Should also be equipped with advanced security features to safeguard sensitive communications and data, adhering to the highest standards of data privacy and security protocols.		
76.13	The platform should feature a multilingual user interface expansion with enhanced capabilities for multilingual transcription and translation, supporting (Hindi and English).		
76.14	The platform may have a provision to broadcast Live Stream content on specific URL/Domain in addition to Social Media Streaming Platforms like (You Tube, Facebook, etc.).		
76.15	Platform should be robust and flexible, capable of adapting to future technological advancements and expanding user base.		

76.16	It is assumed that the features related to live streaming, pause, video content manipulation and features as per rules are integrated in Hybrid VC Solution, if any other component is required for the above mentioned features, please specify.		

Annexure G
Financial Bid

ITEMWISE BOQ						
Tender Inviting Authority	**IIT Mandi iHub and HCI Foundation C/o Indian Institute of Technology Mandi, North Campus, VPO Kamand, Near Mind Tree School, District Mandi, Himachal Pradesh, India. Pincode: 175075**					
Name of the Bidder/Bidding Firm						
S No	**Product**	**Model**	**Item Code**	**Qty**	**Rate Per Unit Including GST**	**Total Amount including GST**
1	PTZ Camera (with mount) (facing towards Hon'ble Chief Justice)	Canon CR-N100	Item 1	1		0
2	PTZ Camera (with mount)	PeopleLink Elite 4K Premium 12X Camera	Item 2	25		0
3	Gooseneck Microphones (with stand)	Peoplelink Gooseneck PL-TT-GN-MP -18	Item 3	19		0
4	Gooseneck Microphones (with stand)	Peoplelink Gooseneck PL-TT-GN-MP-32	Item 4	24		0
5	Speakers (with mount)	PeopleLink Wall Mount Speakers	Item 5	26		0
6	Amplifier & DSP	PeopleLink Amplifier 200 W + PeopleLink-Pro-Audio-DSP 12 Channel	Item 6	12		0
7	Displays with Mount 55"	Samsung QB55C	Item 7	2		0
8	Displays with Mount 32"	SamsungQB32C	Item 8	12		0
9	Smart Table Monitor- 21"	PeopleLink Interact 21M	Item 9	20		0
10	HDMI Distribition Amplifier	nT 13AX02	Item 10	12		0
11	HDMI Extender	nT 16BD03	Item 11	36		0
12	USB Extender	nT 16EC04	Item 12	36		0
13	Computer System	Dell/HP	Item 13	12		0
14	24 U Rack	Reputed	Item 14	12		0
15	Wall/Ceiling Mount for Existing Displays (43" - 2 Nos & 32" - 8 Nos)	Reputed	Item 15	10		0

16	Wall / Ceiling Mount for Existing Cameras	Reputed	Item 16	10		0
17	Video Backup Server	HP	Item 17	1		0
18	Display Monitor with Stand for Mini PCs in DCR	Reputed	Item 18	5		0
19	Video Conferencing Solution License (Yearly)	As per the Spec	Item 19	12		0
20	Cables (LAN Port, Lan Cbaling, Power Point Etc.,)	Lupsum		1		0
21	Installation & Commissioning Charges	Lupsum		1		0
					TOTAL AMOUNT IN FIGURES	0
	QUOTED RATE IN WORDS					