

**OFFICE OF THE PRINCIPAL DISTRICT AND SESSIONS JUDGE  
EAST SINGHBHUM AT JAMSHEDPUR**

**CIVIL COURT, SAKCHI, JAMSHEDPUR – 831001**

**Certificate for Purchase & Installation of Video Conferencing System  
in the Conference Hall of Civil Court, Jamshedpur**

**TENDER - NOTICE INVITING QUOTATIONS**

<b>1. Articles / Items to be purchased</b>	<b>Video Conferencing System</b>			
	[Audio & Visual set up including installation of Cameras / LED panels / integrated 34microphone / speaker, etc]			
	<b>Sl. No.</b>	<b>Description</b>	<b>Quantity Required</b>	<b>unit</b>
	1	Supply of Corded Digital Delegates Units Gooseneck microphone	16	Each
	2	Supply of Corded Digital Chairman Unit Gooseneck microphone	1	Each
	3	Supply of Digital central conference controller with Built-in MP3 recorder with internal memory and USB recording	1	Each
	4	Supply of wall mounted cabinet speaker 30 Watt includes mounting system Dual 4" 2-Way Surface-Mount Loudspeaker	4	Nos.
	5	Supply of Power Amplifier Dual 250 W/CH Power Amplifier	1	Nos.
	6	Supply of Handheld Wireless Mic with Cardioid polar pattern for transmitter	1	Nos.
	7	Supply of Headworn Wireless Mic with Cardioid polar pattern for transmitter	1	Nos.
	8	Supply of Networkable Digital Signal Processor having min 8 AEC Inputs and 04 Outputs	1	Nos.
	9	Supply of Video Conferencing System with Full HD 12x Camera	1	Nos.
	10	Supply of required cables, connectors & Accessories	1	Set
	11	Supply of Fully Loaded 6U 19" 600*600 Wall Mounted AV Rack with all required accessories	1	Nos.
	12	Supply of speaker Cable 2 core 2.5 Sqmm Annealed Tinned copper braiding	90	Mtrs
	13	Supply of Mic Cable, CM-Rated, 1-24 AWG stranded high-conductivity bare copper pair with PVC insulation	50	Mtrs
	14	Supply of Modular Cable cubby	1	Nos.
	15	Supply of 4K60 4:4:4 transmitter	1	Nos.
	16	Supply of 4K60 4:4:4 Receiver	1	Nos.
	17	Supply of rack-mountable 4K60 4:4:4 presentation system 04 HDMI	1	Nos.
	18	Supply of HDMI - HDMI Cable 1.8 Mtrs	6	Nos.
	19	Supply of Shielded Twisted Pair CAT-6 Control cable	50	Mtrs
	20	Supply of 75 inch 4K LED Panel	1	Nos.
	21	Supply of 8x ports 10/100/1000BASE-T Ports,2x 1G SFP ports,2x 1GbE ports , Supports PoE Standards IEEE 802.3af, 802.3at,1x USB-C Console Port,1x USB,Up to 60 W of Class 4 PoE Power	1	Nos.

  
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		22	Supply of UTP Cat6 Cable	80	Mtrs
		23	Supply of PVC conduit of size 20 mm	50	Mtrs
		24	Supply of PVC conduit of size 25 mm	50	Mtrs
		25	2 KVA, ON Line UPS Single phase input and single phase out put power with 30 Min Backup along with Interconnecting cables and Rack	1	Set
2	<b>Cost</b>	A separate note will be put up for Financial sanction after cost is ascertained by the Purchase Committee at Civil Court, Jamshedpur.			
3	<b>Makers Name and Address</b>	<p>1. Bids are invited from all the reputed and established brands having its office / authorized dealers / service providers etc within the jurisdiction of Jamshedpur or its nearby places such as Ranchi in order to provide the onsite assistance / service whenever required.</p> <p>2. The concerned manufacturer / supplier / dealer / service provider etc, as the case may be, must have its office at Jamshedpur / Ranchi or its nearby places.</p> <p>3. The concerned manufacturer / supplier / dealer / service provider etc, as the case may be, shall have to submit all the documents required as per the annexure.</p>			
4	<b>Period of Notice / Bid</b>	<p><u>All Bids / Quotations must be submitted in the Office of Judge-in-Charge (Nazarat) at Civil Court, Jamshedpur with all relevant documents.</u></p> <p><b><u>Last Date for submission of Quotation – 02.01.2025 (04:30 PM)</u></b> No Bid / Quotation will be accepted after 04:30 PM on 02.01.2025.</p>			
5	<b>Justification</b>	<p>1. The manufacturers / authorized dealers / service providers of reputed &amp; established brands having its office at Jamshedpur or its nearby places will be preferred in order to get the onsite assistance as well as service whenever required at short interval of time.</p> <p>2. The concerned manufacturer / supplier / dealer / service provider etc, as the case may be, shall have to submit all the documents required as per the annexure, if required, so that the sincere &amp; devoted bidders can only be participated in the Bid.</p> <p>3. The Bid is to be floated for reasonable period as there is urgency of installing the Video Conferencing System.</p>			
6	<b>Eligibility / Pre Qualification Criteria for Bidders</b>	<p>1. Annualized Average Financial Turn Over: Bidder should have annualized average financial turnover of at least INR 2.00 Crore during last 3 years ending 31<sup>st</sup> March of previous Financial Year - FY 2020-21, 21-22,22-23. As a proof of financial turn over, copy of Audited Balance Sheet (ABS) along with Profit &amp; Loss (P/L) account of the bidder for the last three financial year should be submitted. The bidder should be in state of profit making organization and it should be declared by the CA .</p> <p>2. The Intending bidder may be Proprietorship firm/Partnership firm/Limited Liability Partnership firm/Pvt. Ltd/Limited and firm should have experience of having successfully completed similar works, as a Bidder during last 5 Five) years ending last day of month previous to the one in which bid applications are invited at AT ANY GOVERNMENT/ PUBLIC SECTOR UNDERTAKINGS/ LIMITED COMPANY/ INSTITUTION/PVT. ORGANISATION /STATE BODIES etc .</p> <p>3. Bidder should be ISO 9001:2015 certified organization, Bidder should have MSME or Udyam Aadhar Certificate for the same should be submitted alongwith BID.</p> <p>4. Bidder must not be under bankruptcy code proceedings (IBC) by NCLT or under liquidation /BIFR, which will render him ineligible for participation in this tender, and shall submit undertaking to this effect.</p> <p>5. Proof of Execution of Works: Bidder should have successfully completed similar</p>			

  
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work(s) i.e for Audio Video works / AV Integration work strictly confirming during last Five years ending on tender due date.

- Single order of value not less than Rs. **32 Lakhs** or
- Two orders of value not less than Rs. **20 Lakhs** each or
- Three orders of value not less than Rs. **16 Lakhs** each.

6. The Bidder should be an Authorized Channel/ Business /Service partner or System Integrator (SI) of OEM. The bidder should submit manufacturer Authorization Form (MAF) from OEMs as the valid documentary proof in this regard.
7. Bidder Should submit all the data sheets of the relevant quoted products along with make and specified Model or Part code.
8. Bidder and OEM of the equipment should have either ISO 9001:2015 or ISO 9001:2008 certification and documentary evidence to be submitted.
9. Bidder shall provide the comprehensive manufacturer's warranty / support in respect of proper design, quality and workmanship of all hardware, equipment, accessories etc.
10. During this Bid Stage, Bidders are invited to carry out the site survey at their own cost, such survey as may be required for submitting their respective Proposals.
11. Any Bidder which has been barred by the Central Government/State Government or any entity controlled by them, from participating in any project/provision of service and the bar subsists as on the Proposal Due Date, shall not be eligible to submit a Proposal. A self declaration to be submitted on the letter head of the bidder regarding the same along with the technical bid.
12. A Bidder should, in the last 3 (three) years, have neither failed to perform on any contract, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award against the Bidder, nor been expelled from any project/provision of service or contract nor have had any contract terminated for breach by such Bidder. The OEM & Bidder should never be barred from any project for what so ever the reason.
13. The Bidder will be responsible for all liabilities, life, losses, claims, damages, costs and expenses that may be incurred by or asserted against any such party / authority or any liability accrued by the agency for the assignment. Agency will be responsible for cost incurred during installation and removal of all materials/items used during the execution period.
14. The Bidder shall provide the proposed Key Personnel with the requisite managerial / support staff ("**Support Personnel**") to ensure timely completion of the Services within the specified time schedule.
15. No outsourcing of the contract to third party is allowed at any point of the contract period . Attach an undertaking regarding the same.

**NOTE : 1. The Tenderer reserves the right to reject any Proposal that does not meet this requirement.**

**2. Jurisdiction : All disputes including court proceedings shall be settled within the jurisdiction of Jamshedpur Judgeship i.e; at Civil Court, Jamshedpur.**

Jamshedpur, dated : 10<sup>th</sup> December, 2024

By the Order of PDJ Sir, Jamshedpur

*S. Chand Tudu*  
10/12/2024  
Judge-in-Charge  
Civil Court, Jamshedpur  
**Judge-in-Charge,**  
**Civil Court, Jamshedpur**

**TECHNICAL SPECIFICATIONS FOR AV SYSTEMS AT CONFERENCE HALL**

SI No	Parameters	Description	Make/Model	Compliance (Yes/No)
1	Delegate unit	<b>Supply of Corded Delegate unit with Following Specifications;</b>		
		The Discussion Device shall enable participants to take part in a discussion by speaking into a microphone and listening to proceedings on a loudspeaker. The device shall have the following features and benefits:		
		Plug-and-play functionality.		
		Compact, attractive, ergonomic design, with LED indicator in the Discussion Device and in head of microphone.		
		Choice of short or long fixed microphone with flexible stem.		
		Loudspeaker integrated into front of device.		
		Built-in headphone socket with output level control.		
		Automatic level reduction when microphone is activated (configurable via web browser application of Control Unit): prevents acoustic feedback from headphone to microphone.		
		Configurable as a participant or chairperson's device: changeable microphone buttons and concealed slide switch at the bottom of the device for configuration purposes.		
		GSM immunity.		
		The device shall have the following user controls and indicators:		
		Microphone button.		
		Color-coded LED indicator above microphone button for showing the status of the device:		
		- White ('Possible-To-Speak') shall indicate that the microphone will be active immediately after pressing the microphone button.		
		- green shall indicate that the participant has pressed the microphone button and the request to speak has been added to the waiting list.		
		- green flashing shall indicate that the participant is first in the waiting list, i.e. next in line to speak.		
		- red shall indicate that the microphone is active.		
		Color-coded light-ring indicator in head of microphone: green shall indicate that a request-to-speak has been added to the waiting list; green flashing shall indicate that the participant is first in the waiting list; red shall indicate that the microphone is active.		
		Rotary thumbwheel on side of device for adjusting volume of connected headphones.		
		Frequency response 200Hz-12.5kHz		
		Headphones load impedance >32ohms <1kohm		
		Loudspeaker nominal output 72dB SPL		
2	Chairman Unit	<b>Supply of Corded Chairman unit with Following Specifications ;</b>		
		The Discussion Device shall enable participants to take part in a discussion by speaking into a microphone and listening to proceedings on a loudspeaker. The device shall have the following features and benefits:		
		Plug-and-play functionality.		
		Compact, attractive, ergonomic design, with LED indicator in the Discussion Device and in head of microphone.		
		Choice of short or long fixed microphone with flexible stem.		
		Loudspeaker integrated into front of device.		
		Built-in headphone socket with output level control.		
		Automatic level reduction when microphone is activated (configurable via web browser application of Control Unit): prevents acoustic feedback from headphone to microphone.		
		Configurable as a participant or chairperson's device: changeable microphone buttons and concealed slide switch at the bottom of the device for configuration purposes.		
		GSM immunity.		

		The device shall have the following user controls and indicators:		
		Microphone button.		
		Color-coded LED indicator above microphone button for showing the status of the device:		
		- White ('Possible-To-Speak') shall indicate that the microphone will be active immediately after pressing the microphone button.		
		- green shall indicate that the participant has pressed the microphone button and the request to speak has been added to the waiting list.		
		- green flashing shall indicate that the participant is first in the waiting list, i.e. next in line to speak.		
		- red shall indicate that the microphone is active.		
		Color-coded light-ring indicator in head of microphone: green shall indicate that a request-to-speak has been added to the waiting list; green flashing shall indicate that the participant is first in the waiting list; red shall indicate that the microphone is active.		
		Rotary thumbwheel on side of device for adjusting volume of connected headphones.		
		The chairman has a separate microphone button and priority button enable the user to function as the chairperson at a conference or meeting. The chairperson's microphone shall be activated when the priority button is pressed and held in. All currently active participant microphones shall be muted, allowing the chairperson to take control of the meeting. A chime shall be sounded to announce that the chairperson is about to speak		
		Frequency response 200Hz-12.5kHz		
		Headphones load impedance >32ohms <1kohm		
		Loudspeaker nominal output 72dB SPL		
3	Conference Controller	<b>Supply of Digital central conference controller with following specifications ;</b>		
		The Control Unit shall have the following features and benefits:		
		Plug-and-play functionality for quick and easy connection of Discussion Devices.		
		Intuitive touch-buttons on the front panel for easy configuration and operation purposes.		
		Intuitive LED indicators for clear and immediate feedback on the system settings.		
		Web browser control – it shall be possible to use a web browser application to view and manage system settings.		
		System control for up to 80 Discussion Devices.		
		Hot swap of Discussion Devices, without having to power down the system.		
		Plus/minus buttons and green LED indicators for setting the volume range of all connected Discussion Devices.		
		Microphone-mode selection button and green LED indicators for selecting one of the following microphone operating modes: 'open mode', 'override mode', 'voice activation mode', and 'push to talk (PTT) mode'.		
		Number of Open Microphones (NOM) button and green LED indicators for selecting the number of microphones that can be activated at the same time. It shall be possible to select up to four open microphones at the Control Unit.		
		Built-in digital recorder with internal memory and USB recording.		
		Built-in loudspeaker and headphone socket for listening to recorded discussions before replaying them to the Floor, or listening to recordings.		
		Built-in Digital Acoustic Feedback Suppression (DAFS).		
		USB connector on front of unit for connecting a USB memory stick.		
		Gain reduction due to number of open microphones (NOM) 1/SQRT (NOM)		
		Sample rate 44.1kHz		
		Nominal input (85 dbSPL) <0.5%		
		Max. input (110 db SPL) <0.5%		
		<b>Recorder</b>		

		Recording/ Playback 64,96,128,256Kbit/sec		
		Recording/ Playback (sample frequency) 44.1kHz		
		<b>Monitoring loudspeaker</b>		
		Nominal output 72dB SPL		
		Frequency response 200Hz-12.5kHz		
4	Speaker	Supply of wall mounted cabinet speaker 30 Watt includes mounting system Dual 4" 2-Way Surface-Mount Loudspeaker, Compact full range, Ideal for Conference Halls, patios, and retail, Vented LF enclosure, 1-inch titanium diaphragm HF driver with neodymium magnetic structure, Coherent Coverage Waveguide, Full-bandwidth overload protection (LF and HF), Elliptical weather-resistant ABS enclosure, Paintable black or white finish, Magnetically shielded for video applications, Strong-Arm Mount™ for easy, flexible aiming, "T" version for 70 or 100 V distributed systems with specifications of Frequency Range (-10 dB)- 65 Hz – 20 kHz, Sensitivity (SPL, 1 W/1 m)- 89 dB, Max. SPL/1m (calc.)- 115 dB, Power Handling (Continuous, Peak)- 100 W, 400 W, Transformer taps (transformer version only)- 70 V: 3.75 W, 70 V/100 V: 7.5, 15, 30 W, Coverage, H x V- 120° x 80°, LF Transducer-Two 4", HF Transducer -1", Nominal impedance- (non-transformer version)- 8 Ω ;		
5	Amplifier	Supply of Power Amplifier Dual 250 W/CH Power Amplifier, Efficient performance for low impedance or distributed systems, Ideal for sound reinforcement, paging, and life safety, 250 W per channel for 4 Ω or 70/100 V lines, Bridged mono out for 540 W into 8 Ω, Compact 2 RU design, Stepped rear-panel level attenuation, Selectable 50 Hz or 300 Hz high-pass filter, Thermal protection, peak limiting, turn-on delay Phoenix-type inputs and outputs, Three-stage front-to-rear fans, Integrated rack ears for direct mounting, have detailed specs of Power Bandwidth THD=1%, Ref. 1kHz, Half Power-45Hz - >20kHz, Input Impedance, 20Hz ... 20kHz, Balanced- >20kOhm, Signal-to-Noise Ratio, A-Weighted 103 dB, Input Sensitivity at Rated Output Power or Voltage, 1kHz-0dBu (775mV), THD at rated output power, MBW=80kHz- 1kHz- <0.1%, IMD-SMPTE, 60Hz, 7kHz <0.1%, DIM30, 3.15kHz, 15kHz <0.1%, Crosstalk, Ref. 1kHz, at 15% Rated, Output Power- <-75 dB, Power Requirements- 120V or 230V, 50Hz -60Hz, Protection - Audio Limiters, High Temperature Peak Current Limiters, Turn-On Delay, Cooling Front-to-Rear		
6	DSP	Supply of Networkable Digital Signal Processor having min 8 AEC Inputs and 04 Outputs with IP/RS-232 Control port; having integrated digital bus/network for expansion of inputs and output ports. The processor shall have programmable DSP like compressor, limiters, EQ, duckers, feedback control, Sampling Rate 48kHz or better, A/D-D/A Converters- 32-bit or better, Phantom Power +48VDC, etc. complete with standard accessories complete as required with following Compliance CE, FCC Part 15B, Industry Canada ICES-003:7, Intertek ETL (US, CA), RoHS, REACH.		
7	Handheld Wireless Mic	Supply of Handheld Wireless Mic with Cardioid polar pattern for transmitter, Dynamic microphone with Neodymium magnet, Receiver frequency response 80Hz-18kHz, Receiver RF sensitivity < 1.0 μV, Receiver Image rejection >55dB, Receiver Dynamic range >95dB and receiver having 32 channels possible, Receiver S/N ratio >100dB A, distortion <1 %, Transmitter sensitivity - 3.2 mV/Pa, modulation: +/-40kHz		

7	Headworn Wireless Mic	Supply of Headworn Wireless Mic with Cardioid polar pattern for transmitter, Dynamic microphone with Neodymium magnet , Receiver frequency response 80Hz-18kHz,Receiver RF sensitivity < 1.0 μV,Receiver Image rejection>55dB,Receiver Dynamic range >95dB and receiver having 32 channels possible,Receiver S/N ratio >100dB A,distortion<1 %, Transmitter sensitivity - 3.2 mV/Pa,modulation:+/-40kHz		
8	Cables & Accessories	Supply of required cables, connectors & Accessories for Meeting Hall & Conference hall apart from the BOQ items such as XLR, Phono,3.5 MM etc connectors and cables. All should be standard brand such as Neuterik/AMP/Mx etc and cables should be of Belden/Krystal/MX		
9	Rack	Supply of Fully Loaded 6U 19" 600*600 Wall Mounted AV Rack with all required accessories -2 Nos. of Fan,16A 6 Plug PDU-1 Nos. ,Cable Manager-2 Nos., Mounting Screws-20 Pcs ; The Front frame should be integrated with top, bottom, front and two side panels for better rigidity and strength, Front Glass Door with Lock loaded, Compliance with standards shall be UL 2416., DIN 41494, IEC EN 60529, IEC EN 62262 , IEC EN 60068-2-11 , ISO 9001:2008		
10	Speaker Cable	Supply of speaker Cable 2 core 2.5 Sqmm Annealed Tinned copper braiding, Electrolytic High Conductor Copper Multistrand Flexible, Conductor as per IS:8130/1984 of class-5, PVC insulated as per IS: 5831/1984, Cores Twisted together,overall PVC sheathed as per BS-5308 Part-2 ,multi core Flexible cable, .;		
11	Cable	Supply of Mic Cable, CM-Rated, 1-24 AWG stranded high-conductivity bare copper pair with PVC insulation, +90% bare copper spiral shield, PVC jacket, Nom. Conductor DCR-22.8 Ohm/1000ft, Nom. Capacitance Cond-to-Cond-- 33 pF/ft (110 pF/m), Nom. Capacitance Cond-to-Other (Conds + Shield)-61 pF/ft (200 pF/m), Max. Current- 3.9 Amps per Conductor at 25 degree Celcius;		
12	Cable Cubby	Supply of Modular Cable cubby with fully Retracting Lid, aluminium black anodized cover, Consisting of 1 x HDMI retractable cable which retracts gracefully by simply lifting it vertically above the table, , 1 x LAN and 1 x 5 Amp Power Socket,		
14	Transmitter_HDMI	Supply of 4K60 4:4:4 transmitter to interoperate with a receiver for the transmission of a HDMI® signal. It should be used with a CAT5e or higher twisted pair cable to extend the HDMI Signals. For 1080p, WUXGA, and 2K signals, a cable length of up to 230 ft (70 m) should be supported. For UHD and 4K signals, a cable length of up to 130 ft (40 m) should be supported. It should support HDR10, HDR10+, and Dolby Vision® video formats, should have compliance with HDCP 2.3, CEC (Consumer Electronics Control) , pass-through capability, EDID pass-through capability, Compact surface-mountable design.		

15	Receiver_HDMI	Supply of 4K60 4:4:4 Receiver to interoperate with a Transmitter for the reception of a HDMI® signal. It should be used with a CAT5e or higher twisted pair cable to extend the HDMI Signals. For 1080p, WUXGA, and 2K signals, a cable length of up to 230 ft (70 m) should be supported. For UHD and 4K signals, a cable length of up to 130 ft (40 m) should be supported. It should support HDR10, HDR10+, and Dolby Vision® video formats, should have compliance with HDCP 2.3, CEC (Consumer Electronics Control), pass-through capability, EDID pass-through capability, Compact surface-mountable design		
16	Video Presentation System	Supply of rack-mountable 4K60 4:4:4 presentation system 04 HDMI®, two pairs of mirrored HDMI and DM Lite outputs with 4K60 scalers, and analog audio inputs and outputs. Should include support of HDR (High Dynamic Range) and Dolby Vision video formats, audio mixing, advanced EDID management, XiO Cloud connectivity, and enterprise-grade security. Ethernet for connectivity to network, USB for Programming;		
17	HDMI Cables	Supply of HDMI - HDMI Cable 1.8 Mtrs, High-speed Category 2 HDMI® cable, 24k gold-plated 19-pin Type A connectors, High-flex CL3-rated jacket, it should have guaranteed end-to-end system performance, should support 4K60 4:4:4 video, 18 Gbps bandwidth @ up to 20 ft (6.1 m), Supports 4K60 4:2:0 and 4K30 4:4:4 video @ 30 ft (9.1 m), RoHS compliant;		
18	Control Cable	Supply of Shielded Twisted Pair CAT-6 Control cable for connectivity complete etc. as required.		
21	SITC of 12x ports 10/100/1000BASE-T Ports, 2x 1G SFP ports, 2x 1GbE ports, Supports PoE Standards IEEE 802.3af, 802.3at, 1x USB-C Console Port, 1x USB, Up to 139W of Class 4 PoE Power, Fanless Design, with Dual Core ARM Cortex A9 @ 1016 Mhz CPU, Memory-4 GB DDR3 16 GB eMMC, Packet Buffer Size of 12.38MB (4.5MB Ingress/7.875MB Egress), IPv6 Ready Certified MAC address table size: 16000 entries; Average Latency-1 Gbps Latency: < 1.5 µs (LIFO 64-byte packets), Throughput: up to 23.8 Mpps (64-byte packets), Switching capacity: 32 Gbps, Operating Temperature 32°F to 113°F (0°C to 45°C) up to 5000 ft (1.5 km), Certifications-UL, EN, FCCI,			
22	1 Run CAT6 UTP Cable (for Network only . )			
	<b>Detailed Spec for Cat 6 UTP PVC Cable</b>			
	4 Pair Cable with integral cross-member pair separator for uniform characteristic impedance.			
	Category 6 Unshielded Twisted 4 Pair 100 Ω cable shall be compliant with ANSI/TIA/EIA-568-C.2-1 Additional ISO/IEC 11801:2010 (Ed. 2.2) and ISO/IEC 61156-5			
	Suitable for 10GBase-T applications in acc. with IEEE 802.3an up to 500 MHz and 55 m.			
	Transmission Performance Specification for 4 Pair 100Ω Category 6 Cabling			
	Category 6 UTP cables shall extend between the work area location and its associated telecommunications closet and consist of 4 pair, UTP CM cable jacket.			
	Conductor: Solid Copper			



	Conductor Diameter: 0.555±0.01mm (23AWG)		
	Insulator HD Polyethylene solid		
	Jacket: PVC RoHS complied		
	Outer Diameter: 6.0 ± 0.2mm		
	Max Temperature: -20°C to +70°C		
	<i>Should be ETL certified, UL Listed</i>		
	Should have Pulling force of 11.5Kg.		
	Bend Radius: Installation: <4 X Cable Diameter at -20°C ±1°C, Operation: <4 X Cable Diameter at -20°C ±1°C		
	Conductor Resistance :<9.38Ω /100m		
	Resistance Unbalance 5% Max		
	Mutual Capacitance :< 5.6nF/100m		
	Capacitance Unbalance : 330pF/100m.		
	Propagation Velocity : 69%		
	ELT certified for 4 Channel should be submitted along with bid submission		
23	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required. Preferred Make-AKG/NORPACK/Polycab/Dauphin		
a	20 mm		
24	25 mm		

## 2 kVA UPS Technical Specification

25			
	A. <b>Section Includes:</b> The work specified in this Section includes, but shall not be limited to, a continuous duty, single-phase, solid state, static UPS. The UPS and associated equipment shall operate in conjunction with a primary power supply (utility and/or on site generation) and an output distribution system to provide quality uninterrupted power for mission critical, electronic equipment load. The system shall consist of a solid state IGBT rectifier and inverter, power factor corrected rectifier, a 100 percent rated, continuous-duty static switch, graphical status panel, and synchronizing circuitry as described herein.		
	1. The UPS rated for unity power factor 2KVA= 2KW		
	2. The UPS control logic shall incorporate state of the art digital signal processing.		
	3. The inverters shall utilize high speed pulse width modulation.		
	4. The UPS shall require rear or side access for maintenance or repair.		
	5. Cooling shall require air intake from the front and side and air exhaust from the rear of the UPS.		
	6. The UPS shall include fan with variable speed that are field-replaceable.		

	7. The UPS shall be capable to be synchronized with mains supply.		
	8. The UPS shall support frequency conversion.		
	9. The UPS shall manage, by software setup, cycling battery recharge and test automatically.		
	10. UPS shall be capable of integrated parallel operation up to N+4.		
	11. Higher efficiency modes of operations such as ECO mode		
	12. 3-level inverter and rectifier technology		
	13. Inbuilt Static and Manual Bypass.		
	<b>B. Standards / Certification:</b>		
	1. ISO 9001:2015, "Quality Management Systems - Requirements."		
	2. ISO 14001:2015, "Environmental Management Systems - Requirements with Guidance for Use."		
	3. ISO 45001: 2018 "Occupational Health and Safety Assessment".		
	4. CE Certificate (EN 62040-1 - Part 1: General and safety requirements for UPS)		
	5. CECertificate(EN/IEC 62040-2: Electromagnetic compatibility (EMC) requirements)		
	6. Certificate for Surge - EN 61000-4-5;ESD- EN 61000-4-2; Power-frequency magnetic field - EN 61000-4-8; Low-frequency signals - EN 61000-2-2.		
	7. IEC 62040-3, "Uninterruptible Power Systems - Method of Specifying the Performance Test Requirements."		
	8. IS 9000 – Environment Test Procedure (Damp / Dry / Cold testing method).		
	9. RoHS Certificate.		
	10. Central / State Gov - Pollution Control Board certificate for Air & Water.		
	11. BIS approved product – Make in India required.		
	<b>C. System Characteristics:</b>		
	1. <b>Input:</b> The system input shall be configurable from single inputs source.		
	a. <b>Input voltage:</b> 230 V,50/60Hzsingle-phase, 1P + PE		
29a	b. <b>Input voltage window:</b> +/- 20percentcontinuous @ 100% Load		

	c. <b>Frequency:</b> 45 to 55 Hz		
	d. <b>Input Power Factor Correction:</b> 0.99 @>75% load		
	e. <b>Switch on time:</b> UPS shall have programmable and adaptive walk-in duration 5-30sec		
	f. <b>Input CurrentTotal Harmonic Distortion (THDI):</b> <5% @ 100% load.		
b	<b>2. UPS Output:</b>		
	a. <b>Output Voltage:</b> 220 /230/240V, 50/60Hz, 1 PH, 3-wire 1P+PE.		
30	b. <b>Frequency:</b> 50 Hz, $\pm 0.1$ Hz (Free Running), +/- 1 or 3 Hz (Mains Sync).		
	c. <b>Output voltage regulation:</b> $\pm 1\%$ for 100% linear load.		
31	d. <b>Output Voltage Transient Response:</b> The output voltage returns to within $\pm 5\%$ of the steady state value within 20ms.		
	e. <b>Output Power Factor:</b> 1.0		
	f. <b>Output Voltage Transient Characteristics:</b> 100% load step change +5%		
	g. <b>Output Voltage Total Harmonic Distortion (V-THD):</b>		
	a) <2% at 100% linear load		
	b) <5% at 100% non-linear load		
	h. <b>Crest Factor:</b> 3:1		
	i. <b>Overload Rating: Normal &amp; Battery Operation</b>		
	a) 105-110% continues operation with warning.		
	b) 111% to 130% for 5 min		
	c) 131% to 150% for 1 min		
	j. <b>System AC-AC Efficiency:</b>		
	a) >90% in normal operation 100% load		
	b) Up to 98% in ECO mode		
	<b>3. Battery</b>		
	a. <b>Battery Voltage:</b> 96 volts DC.		
	b. <b>Energy Storage:</b> 12 V VRLA SMF Battery.		
	c. <b>Battery Make:</b> Exide / Amara Raja.		

d. <b>Backup time:</b> 30Min.		
e. <b>Battery VAH:</b> min 2688 VAH		
f. <b>Charge current:</b> 10 % of the Battery AH Capacity.		
g. <b>Battery Rack:</b> Required		
h. <b>Deep Discharge Protection:</b> The ups shall be provided with control circuits to limit the level of discharge on the battery system. These control circuits shall be capable of varying the shutdown level to accommodate any type of battery recommended for UPS application.		
i. <b>Cold Start:</b> If DC bus is already energized, UPS shall be able to start from battery power if no utility power is available at the UPS input.		
<b>4. Environment</b>		
a. <b>Operating Ambient Temperature:</b> 0 to 40°C		
b. <b>Storage Temperature:</b> -10 to 50°C		
c. Maximum installation with no derating of the UPS output shall be 1000 m above sea level.		
d. <b>Relative Humidity:</b> 0 to 95% RH Non-Condensing		
e. <b>Audible Noise:</b> <50dBA at 100% load		
<b>5. Front Panel LCD Display:</b> The UPS control panel shall provide a user-friendly display for indication of UPS status for the overall system metering, fault information, mimic, alarm and advanced operational features.		
<b>6. System Parameters Monitored:</b> The visual display shall include, but shall not be limited to, the following system parameters based on true RMS metering:		
a. <b>Measurements:</b>		
a) Input voltage		
b) Input frequency.		
c) Bypass voltage.		
d) Bypass frequency.		
e) UPS output voltage.		
f) UPS output frequency.		

	g) UPS output percent load.		
	h) Battery voltage.		
	<b>b. Indication:</b>		
	a) Mains		
	b) Bypass		
	c) Parallel		
	d) ECO		
	e) Fault		
	D. <b>Protection:</b> Overload, Over Temp, Short Circuit, Back feed, Input high / low, DC Low, Breaker for Input and Bypass.		
	E. <b>Audible Alarm Reset:</b> The UPS shall provide an audible alarm that can be stopped using the user interface.		
	F. <b>Emergency Power Off (EPO):</b> Required		
	G. <b>Warranty for UPS and Battery:</b> 2 Years		
	H. <b>Communication:</b> RS 232 / USB port		
	<b>I. Service Support:</b>		
	UPS OEM should have Service Center in 7 at Jharkhand to ensuring 24 / 7 support. Contact numbers and addresses to be provided.		
	OEM must provide Escalation Matrix of Telephone Numbers for Service Support.		
	J. Bidder/ Supplier/ Organization/ Proprietor/ ANY of the Director(s) shall not be banned or suspended or blacklisted by any Government / Public Sector Undertaking / Corporate organization or convicted in any Court of Law across India or declared Bankrupt or insolvent.		
	A self-declaration certificate must be upload in the tender under OEM & Bidders Official Letter Head.		

<b>SL No-9 Technical Specifications of Room Based VC Endpoint</b>				
The proposed system must support PAL/equivalent with PTZ camera. The codec must be based on ITU standards & hardware based. No software based solution will be accepted. All components of the VC system like Codec, Camera, Microphones and Wireless Remote Control/Touch Control Panel should be from the same OEM.				
<b>Sr. No.</b>	<b>Description</b>	<b>Specification Parameter</b>	<b>Compliance (Yes/No)</b>	
1	Package	Full HD 1080p60 PTZ Camera, 4K Codec, Omni directional Digital Microphone, Cables and Wireless Remote Control/Touch Control Panel from the same OEM.		
2	Video Standards and Resolutions	It should support H.323 & SIP standards for communications.		
		It should support interoperability and bandwidth saving using video compression H.264 AVC, H.264 High Profile, H.265		
		It should be able to achieve 1080p resolution from 1024 Kbps onwards & 720p resolution from 512 Kbps onwards while making video call with same set of endpoint		
		It should support 1080p 60 fps, 1080p 30 fps, 720p 60 fps, 720p 30 fps.		
3	Content Standards and Resolutions	It should support both wired and wireless content sharing using standard based H.239 and BFCP. It should also support audio from Laptop used for content sharing.		
		It should transmit content to the far end location up to 4K15fps.		
		It should support inbuilt feature for wireless content sharing from Windows, MacOS, Android, iOS Smartphones & Tables without downloading any application on the user device.		
		It should support Content Annotation and White Boarding / Blackboarding capability when connected to Touch Enabled Display/Monitor. It can also save snapshots taken during a content sharing or whiteboard session.		
4	Audio Standards and Features	It should support G.711, G.728, G.729A, G.722, G.722.1, G.719 or better		
		It should support 20kHz or better bandwidth with crystal clear audio and stereo sound.		
		Automatic Gain Control and Automatic Noise Suppression		
		It should have inbuilt technology to identify and eliminate non-human distracting noises such as keyboard typing, paper shuffling and wrapper crinkling during video calls.		
		Keyboard Noise Reduction, Noise Block AI and Acoustic Fence.		
5	Video and Audio Inputs	1 x HDCI input for connecting main Full HD camera		
		1 x HDMI input to share 4K/Full HD content from PC/Laptop/Document camera/PTZ Camera.		
		3 x HDMI/USB inputs to connect additional PTZ cameras from same OEM to capture whiteboard/presenter and podium area in future whenever required.		
		3 x Microphone Inputs or more with support for minimum 3 digital omni directional mics. The bidder needs to quote 2 digital omni directional microphone with mute/unmute soft touch button on		

		the microphone. Each microphone should have atleast 20 feet pickup range.		
		1 x RCA/3.5mm stereo line-in		
6	Video and Audio Outputs	2 x HDMI output for connecting primary and secondary 4K(UHD)/Full HD displays.		
		1 x RCA/3.5 mm stereo line-out		
7	Other Interfaces	1 x 10/100/1000 Ethernet port		
		1 x USB to support system software upgrade		
		Bluetooth 5.0 and WiFi 802.11a/b/g/n/ac (MIMO) for Wireless Content Sharing for Guests using their Smartphones and Tablets (Android and iOS)		
		1 x RS-232 Serial Port or equivalent port for connecting to external RS-232 controller		
8	Camera	1/2.33" CMOS sensor or better with atleast Horizontal field of view : 65°		
		The camera should support minimum 10X Optical Zoom, PAN +/-100°, Tilt +20/-30° & minimum 10 camera presets.		
		The camera supplied should be connected to VC codec over a single cable for camera PTZ control, video out and power to avoid cable clutter.		
		Video Conference Camera and Codec should be controlled using same remote control/touch panel.		
9	Network Features	H.323 and SIP bandwidth supporting up to 6 Mbps or more.		
		Must support IPv4 and IPv6 from day one on both H.323 and SIP.		
		Auto Gatekeeper Discovery, Lost Packet Recovery (LPR) technology, IP Precedence and DiffServ, Configurable MTU size		
10	USB Pass-Thru Mode	The system should have inbuilt functionality to use the VC system as an external camera and microphones when connected to a Laptop/PC over a single USB cable without using any external hardware components to connect to any Cloud Based VC platform like Cisco Webex, Zoom, BlueJeans, Microsoft Teams, Google Meet, etc.		
		The system should be able to support up to 1080p30fps video transmit in USB Pass-thru mode.		
		It should be possible to Mute/Unmute all the microphones and control camera functionality from the same remote control/touch control panel during USB pass-thru mode.		
		The system should be supplied with 10 mtrs. single USB 3.0 cable from the same OEM for USB Pass-thru mode for seamless functionality.		
11	Cloud Integration	It should be possible to natively register the VC system with Microsoft Teams Room and Zoom Room account for native cloud based video calling features and experience. USB Pass-Thru mode functionality should also be available when the system in running in Microsoft Teams Room / Zoom Room mode.		
12	Security	Media Encryption (H.323, SIP): AES-128, AES-256, H.235.6 support		
		Authenticated access to admin menus, web interface and APIs		
		Local account password policy configuration		
		Global Directory/Centralized Directory/LDAP support		

13	Other Standards/features	H.460.18, H.460.19, SSL, TLS		
14	Warranty	The complete solution should be from the same OEM with 3 years warranty from day one.		

**75 inch 4K LED Panel Specifications**

Particular			Specification	Compliance ( Yes/ No)
Display Panel	Diagonal Size		75" or Higher	
	Resolution		3840x2160(16:9)	
	Brightness(Typ.)		350 nit or Higher	
	Orientation		Landscape / Portrait	
	Haze		2%	
	Contrast Ratio (Typ.)		4000:1 or higher	
	Type		VA	
	Active Display Area		1209.6(H) x 680.4(V)	
	Color Gamut		NTSC 72%	
	Operation Hour		16/7	
Connectivity / Sound	INPUT	VIDEO	HDMI 2.0 (3)	
		HDCP	HDCP2.2	
		USB	USB 2.0 x 2	
	OUTPUT	AUDIO	Stereo mini Jack	
	EXTERNAL CONTROL		RS232C(in/out), RJ45	
	Speaker		10W 2ch	
		Signage Player	Inbuilt Signage Player	
	Internal Player	Operating System	Tizen or Equivalent	
		Processor	CA53 1.3GHz Quad-Core	
		Storage (FDM)	8 GB (3 GB available)	
	Special	H/W	2nd Gen. B2B Design Center IR Temperature Sensor Ambient Sensor Auto Level Wi-Fi(2.4/5.0GHz dual) & BT	
		S/W	Signage New Home Workspace (Microsoft365/VMWare/RDP ) Custom Home Auto Source Switching & Recovery Dicom Simulation Mode Director Mode Upgradable Web-Engine Smart Calibration(Basic) HDR support	
	Certification	Safety		60950-1 / 62368-1
EMC		Class B		
Environment		ENERGY STAR 8.0, EPEAT		



	IP Rating	IP5x	
	Security	802.1x(WPA2 Enterprise) : EAP-TLS, EAP-TTLS, EAP-PEAP	
Power	Power Supply		AC 100 - 240 V, 50/60 Hz
	Power Consumption	Max[W/h]	154
		Typical[W/h]	84
		Sleep mode	less than 0.5W
Operating Condition	Temperature	0°C~ 40°C	
	Relative Humidity	10~80%	
Accessories	Included	Quick Setup Guide, Warranty Card, Power Cord RS232C(IN) Gender Remote Controller & Batteries	
Warranty		3 years Onsite	

### BOQ

SI No	Description	Qty	unit
	<b>Digital Audio Video Conferencing System in Conference Hall</b>		
1	Supply of Corded Digital Delegates Units Gooseneck microphone.	16	Each
2	Supply of Corded Digital Chairman Unit Gooseneck microphone;	1	Each
3	Supply of Digital central conference controller with Built-in MP3 recorder with internal memory and USB recording,	1	Each
4	Supply of wall mounted cabinet speaker 30 Watt includes mounting system Dual 4" 2-Way Surface-Mount Loudspeaker,	4	Nos.
5	Supply of Power Amplifier Dual 250 W/CH Power Amplifier.	1	Nos.
6	Supply of Handheld Wireless Mic with Cardioid polar pattern for transmitter	1	Nos.
7	Supply of Headworn Wireless Mic with Cardioid polar pattern for transmitter	1	Nos.
8	Supply of Networkable Digital Signal Processor having min 8 AEC Inputs and 04 Outputs	1	Nos.

9	Supply of Video Conferencing System with Full HD 12x Camera;	1	Nos.
10	Supply of required cables, connectors & Accessories	1	Nos.
11	Supply of Fully Loaded 6U 19" 600*600 Wall Mounted AV Rack with all required accessories	1	Nos.
12	Supply of speaker Cable 2 core 2.5 Sqmm Annealed Tinned copper braiding, .;	90	Mtrs
13	Supply of Mic Cable, CM-Rated, 1-24 AWG stranded high-conductivity bare copper pair with PVC insulation,	50	Mtrs
14	Supply of Modular Cable cubby	1	Nos.
15	Supply of 4K60 4:4:4 transmitter	1	Nos.
16	Supply of 4K60 4:4:4 Receiver .	1	Nos.
17	Supply of rack-mountable 4K60 4:4:4 presentation system 04 HDMI®	1	Nos.
18	Supply of HDMI - HDMI Cable 1.8 Mtrs;	6	Nos.
19	Supply of Shielded Twisted Pair CAT-6 Control cable.	50	Mtrs
20	Supply of 75 inch 4K LED Panel .	1	Nos.
21	Supply of 8x ports 10/100/1000BASE-T Ports,2x 1G SFP ports,2x 1GbE ports , Supports PoE Standards IEEE 802.3af, 802.3at,1x USB-C Console Port,1x USB,Up to 60 W of Class 4 PoE Power	1	Nos.
22	Supply of UTP Cat6 Cable	80	Mtrs
23	Supply of PVC conduit of size 20 mm	50	Mtrs
24	Supply of PVC conduit of size 25 mm	50	Mtrs
25	2 KVA, ON Line UPS Single phase input and single phase out put power with 30 Min Backup along with Interconnecting cables and Rack	1	Set
26	Installation, Commissioning, Testing and Services Charges	1	LS