

प्रसार भारती / PRASAR BHARATI

भारत का लोक सेवा प्रसारक / INDIA'S PUBLIC SERVICE BROADCASTER

आकाशवाणी महानिदेशालय / DIRECTORATE GENERAL: AKASHVANI

योजना एवं विकास एकक / PLANNING AND DEVELOPMENT UNIT

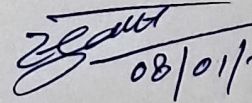
(Studio Design Section)

सं./No.: J/97/2025-STUDIO DESIGN - P&D UNIT

दिनांक: Date: 08.01.2026

**Subject: Publication of Draft Technical Specification for SITC of Video wall and Sound System related equipments and materials for Rang Bhawan, Akashvani Delhi for seeking Vendors/OEMs feedback, percentage of local content and budgetary quote.**

1. Technical Specification for SITC of Video wall and Sound System related equipments and materials for Rang Bhawan, Akashvani Delhi is being uploaded to invite feedback from the Vendors/OEMs. The interested parties are requested to provide comments/feedback on this technical specification.
2. Vendors/OEMs are also requested to provide availability of local content and percentage of local content in the offered equipment.
3. The budgetary price of the offered Video wall and Sound System related equipments and materials may also be submitted.
4. All these information may be provided by E-mail to "[airstudiodesign331@gmail.com](mailto:airstudiodesign331@gmail.com)" on or before **22.01.2026**.



08/01/2026

(SUBASH CHAND RAM)

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For Director General

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प्रसार भारती/ PRASAR BHARATI  
(भारत का लोक सेवा प्रसारक)/ (INDIA'S PUBLIC SERVICE BROADCASTER)  
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(Studio Design)

**Technical Specification for SITC of Video wall and Sound System related equipments and materials for Rang Bhawan, Akashvani Delhi**

**SECTION-I**

**1. General-**

- 1.1 This specification is for Supply, Installation, Integration, Testing & Commissioning of Equipments and Materials for upgradation of Rangbhavan Auditorium, Akashvani New Delhi.
- 1.2 The Equipments from OEMs having ISO certifications should only be offered. OEM should have authorized service centers in the country. List of Equipment's Service Center along with their addresses, Telephone Numbers & E-mail addresses should be provided along with Tender Document.
- 1.3 All the quoted equipments should be field proven technology & OEM of the product should be in business for at least five years.
- 1.4 The tenderer must submit the following documents along with the tender:
  - A) Clause-by-Clause full compliance statement as per format in **Annexure-I** in respect of all clause of specifications of Equipments and Materials duly signed in original.
  - B) Detailed printed literature of the equipments giving complete details of features and performance data on non-returnable basis to facilitate the technical evaluation.
  - C) A copy of un-priced Bill of Material (BOM) as per **Annexure-II** indicating make, model no., complete configuration details, version no., modules details, License details etc. shall be quoted clearly. Any tender, showing ambiguity in above terms shall be treated as incomplete and it will be rejected.
- 1.5 The SITC work of equipments and materials will have to be completed **within three month** after the placement of firm order.
- 1.6 The tenderer will be required to demonstrate the functions of the all or select tendered equipment during technical evaluation in New Delhi at the discretion of the Technical Evaluation Committee. The tenderer will be required to arrange all necessary software & hardware for demonstration during technical evaluation. The demonstration of the system, if required, will have to be conducted with-in one month from the date of issue of Call letter which will be intimated to the bidders. Acoustic measurement figure shall be provided. Non-compliance of demonstration within the stipulated time, will disqualify the tender.
- 1.7 All the equipments must support harsh operating temperature 0°C to 40°C, Operating Humidity Up to 80% RH (non-condensing) at 30° C to avoid hanging and failures.
- 1.8 Power input for all equipments/adapters should be AC 220 ± 10V & 50 ± 2Hz.

## **2. Scope of Work-**

- 2.1 SITC of Video Related equipments such as Video Wall, Floor mount/Wall Displays, Video Camera, Video & Camera Control, Recording & Streaming device and Digital Podium etc.
- 2.2 SITC of Audio Mixer and Sound systems related equipments with Re-programming & integration with existing system.
- 2.3 SITC of Stage Lighting & integration with existing system.
- 2.4 Acoustic improvement works.

## **3. Tender Evaluation-**

- 3.1 The tender shall be technically evaluated on the basis of conformity of bid to Technical specifications.
- 3.2 Technical evaluation shall be done on the basis of compliance statement, customer reference certificates, technical literature related to quoted products and demonstration of functioning of Equipments.
- 3.3 The bids fully meeting technical specifications shall be considered technically fit.

## **4. Supply and Inspection-**

- 4.1 All the Equipments would be inspected at the station for their conformity to Technical Specification.
- 4.2 All the Equipments shall be configured as per AIR requirement before supply.

## **5. Instruction Manual-**

One set of Maintenance/ Operation manuals of each equipment's from OEM should be provided to consignee. A softcopy of all manuals shall also be provided to consignee.

## **6. Warranty & Maintenance and Operational Manpower**

- 6.1 The offered equipments supplied should carry a warranty of 03 years from the date of commissioning.
  - 6.2 In the eventuality of any equipment failing during this period, such fault shall need to be rectified or the relevant part/ equipment replaced free of cost to Akashvani. The services essential for upkeep of the system to be provided during warranty period. The bidder will be required to give an undertaking to this effect along with bid.
  - 6.3 After sales service support for an additional 02 years for repairs/maintenance/ replacement of the offered system after the warranty period should also be provided separately.
  - 6.4 The bidder shall quote for the minimum operational manpower required for conducting routine program as well as special music programs to be organised in this auditorium along with this bid as separate item during warranty period.
  - 6.5 The performance security during warranty period shall be covered by bank guarantee of an amount equal to 3% of the cost of equipment.
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**SECTION-II****SPECIFICATIONS FOR SITC OF EQUIPMENTS AND MARERIALS****A. Video Part****1. Indoor LED Video Wall**

<b>S. No.</b>	<b>Parameters</b>	<b>Specifications</b>	<b>Remarks</b>
1.1	Display Size Ratio (W/H): 16/9	23.5 (+/-)1/2 feet x 13 (+/-)1/2 feet	
1.2	Pixel Pitch	1.6 mm or Better	
1.3	Pixel Configuration	1R1G1B	
1.4	LED Technology	COB (Chip On Board)	
1.5	Brightness	800 cd/m <sup>2</sup> or better	
1.6	Dimming Capability	0-255 Levels or higher	
1.7	Contrast Ratio	20000:1 or better	
1.8	Refresh Rate	3840 Hz or better	
1.9	Colour, Colour Processing	4.4 Trillion, 14-bit	
1.10	Viewing Angle	H: 170° or better, V: 170° or better	
1.11	Lifetime	100,000 hrs or better	
1.12	Max. Power Consumption	70 W/ Cabinet	
1.13	Cabinet Depth	40 mm or lower	
1.14	Luminance meter	Brightness measurement tool Emitted brightness measurement tool namely a luminance meter (which can provide direct brightness reading in cd/m <sup>2</sup> ) for brightness measurement of offered LED screen. OEM of LED Display should provide details (Model No.) of the luminance meter available with them in India along with its latest calibration certificate. The same instrument shall be used to check the minimum brightness levels as offered in the bid. Please note- Illuminance meters are not acceptable as they are not for measuring emitted light.	
1.15 a	Certifications	Mandatory Indian Certifications (BIS Registration copy to be submitted with the supply). As per Standard: IS 13252 (PART 1): 2010. Offered model BIS certificate should be on OEM brand and their own manufacturing unit in India to be provided for the offered LED tiles/cabinets. BIS certificate for led module only shall not be considered as valid. BIS Quality/Health & Safety/Environmental Certifications of OEM/OEM	



		subsidiary in India (Copy to be submitted along with the bid.	
1.15 b	Certifications	Quality Management System 9001:2015 , Occupation health & Safety Management System -OHSAS 45001, Environmental Management System 14001: 2015 Green House Gas Verification - ISO 14064-1: 2018 , EPR Registration certificate to be submitted, All these certificates to be issued by accredited labs who are authorized to conduct audits & issue these certificates.	
1.16	Others	OEM should be present in India for minimum 10 years from the date of bid with their registered office in India owing allegiance to Indian laws.	
1.17	Video Wall Controller	Inputs HDMI, FHD, RJ 45/USB, Support up to 4K-UHD Resolution, Seamless switching & scaling, fade in/ fade out, PIP function support size & location. <b>For Complete solution, LED Video Wall and Controller Unit should be from same OEM/OEM brand to avoid any integration issues at later stage</b>	
1.18	Regulatory Compliance	9001:2015 , Occupation Health & Safety Management System -OHSAS 45001, Environmental Management System 14001: 2015 Green House Gas Verification - ISO 14064-1: 2018 , EPR Registration certificate to be submitted, certification need to submit	
1.19	Mounting Structure of Video Wall	Mechanical Structure For Mounting Of LED screen ( OEM should have in house facility for structure design in India)	

## 2. 75 INCH Display

S. No.	Parameters	Specifications	Remarks
2.1	75 INCH DISPLAY	4K display, Size 75 inch 500nits; 24x7hrs ; DLED; 2G/16Gb ; Haze-25% ; VA panel ; Android 14 ; HDMI IN x3 ; Landscape & Portrait supported ; built in dual band Wi-Fi& BT	
2.2	Floor Trolley for 75 INCH DISPLAY	Supplying, Installation, testing & Commissioning of Floor mount trolley with locking wheels for this Display.	
2.3	Regulatory Compliance for display	BIS ,ISO , certification (need to submit)	

## 3. 55 INCH Display

S. No.	Parameters	Specifications	Remarks
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3.1	55 INCH DISPLAY	55-inch 4K display, Size : 55 inch : 500 nits; 24x7hrs ; ELED; 2G/16Gb ; Haze-25% ; VA panel ; Android 14 ; HDMI IN x3 ; Landscape & Portrait supported ; built in dual band Wi-Fi& BT	
3.2	Floor Trolley for 55 INCH DISPLAY	Supplying, Installation, testing &Commissioning of Floor mount trolley with locking wheels for this Display.	
3.3	Regulatory Compliance for display	BIS, ISO certification (need to submit)	

#### 4. Professional PTZ Camera

S. No.	Parameters	Specifications	Remarks
4.1	Camera Type	PTZ, 4K-UHD	
4.2	Sensor	1/2.3-type CMOS or better	
4.3	Max. Resolution	3840 x 2160	
4.4	Min. Subject Illumination (Color)	1.5 Lux	
4.5	frame frequency	59.94 Hz	
4.6	Focal Length (35mm equivalent)	f=3.67 — 73.4 mm	
4.7	Iris	Auto/ Manual	
4.8	Gain	0.0 — 36.0 dB	
4.9	White Balance	AUTO (AWB)	
4.10	color temperature setting	2000 K — 15000 K	
4.11	Shutter Speed	1/6 — 1/2000 sec	
4.12	Optical Zoom	20x	
4.13	Video Outputs	12G-SDI, 3G-SDI, HDMI, IP	
4.14	Video Transfer Protocol	XC Protocol / RTP(RTSP) / RTMP(S) / NDI HX / SRT/ I	
4.15	Power Supply	PoE+, DC12V	
4.16	Mic Terminal	Φ3.5mm mini jack	
4.17	Certification	Regulatory Compliance BIS certification need to submit	

#### 5. Camera Control Joystick

S. No.	Parameters	Specifications	Remarks
5.1	Camera handling capacity	Camera controller with max number of Cameras connected 100, Number of Cameras Group 10 groups with up to 10 cameras per group, Presets for each camera Up to 100 preset.	

5.2	Touch Screen	Touch Screen 177.8 mm (7-inch) colour touch panel for camera control only	
5.3	Communication Ports	TCP IPv4 ,LANR-45 x 1 (10 BASE-TX) SerialRJ-45 x 1 (RS422)	
5.4	Compatibility with Camera	<b>For Complete solution, PTZ Camera and Joystick should be from same OEM/OEM brand to avoid any integration issues at later stage.</b>	
5.5	Certification	Regulatory Compliance BIS certification need to submit	

## 6. Recording & Streaming device

S. No.	Parameters	Specifications	Remarks
6.1	Inputs/Outputs	Input (HDMI / VGA/ RJ-45), 4 Channel Synchronized recording, Line In, Mic, Wireless Mic, Video Output HDMI	
6.2	Recording Layouts	21 Layouts for pre-defined, including full screen/picture-in-picture / picture-by-picture / multi-channel split screen.	
6.3	Compression etc.	Compression H.264 / AVC, Video Output , Streaming Input Protocol RTSP, RTP, RTMP UDP, Streaming Output Protocol RTP, RTMP (RTMPS), RTSP, Live Broadcast to CDN or Stream Server, Support RTMP Protocol , Post Video Info Editing, Through Video Manager Platform, with 1TB internal storage.	

## 7. HDMI Encoder

S. No.	Parameters	Specifications	Remarks
7.1	HDMI Encoder	4K60 4:4:4 Video Over IP Encoder, Wall Plate with PoE support	
7.2	Ports	Should have HDMI 2.0 & HDCP 2.2 & EDID management, Shall have HDR10+, Should have minimum 1x HDMI and 1x USB-C Input and a USB-C input must support both audio, video and USB 2.0 transport of full-bandwidth USB 2.0 signals on a single connector	
7.3	Audio Interface	Support embedded audio on HDMI, USB-C or Analog Stereo, 8ch PCM and Stereo 2-channel analog audio formats	
7.4	Latency	should be less than 17-ms at 60 fps	
7.5	Security	Must have high security network support including multicast, VLAN tagging and QoS, Encoder should support PoE/PoE+ standards and low-power mode for energy savings, Should have open Standard Control API.	
7.6	Certification	Regulatory Compliance <b>UL, FCC, CE &amp; JITC</b> certification need to submit.	

**8. HDMI Decoder**

S. No.	Parameters	Specifications	Remarks
8.1	HDMI Decoder	4K60 4:4:4 Video Over IP Decoder, Wall Plate with PoE	
8.2	Ports	Should have HDMI 2.0 & HDCP 2.2 & EDID management and Decoder must have built-in Scaler to up-scale and downscale Encoder streams to support Display resolution natively, Shall have HDR10+, Should have minimum 1x HDMI Output Port, and 2 x USB 2.0 Ports for HID and USB Peripheral Support, Should have built-in 1 x IR and 1 x RS232 control ports,	
8.3	Audio Interface	Should have analog stereo, 8ch PCM and Stereo 2-channel analog audio port	
8.4	Latency	Latency should be less than 17-ms at 60 fps	
8.5	Security	Must have high security network support including multicast, VLAN tagging and QoS, Decoder should support PoE/PoE+ standards and low-power mode for energy savings, Should have open Standard Control API.	
8.6	Certification	Regulatory Compliance UL, FCC, & JITE. Certification need to submit.	

**9. AV Controller**

S. No.	Parameters	Specifications	Remarks
9.1	Ports	Minimum 1 x RS422/RS485 Serial port, 3 x RS232 Serial ports, 4 x IR/One-way Serial ports, 4 x Relay ports, 4 x GPIO ports, controller must have one LAN port for 10/100 BASE-T for ethernet communication, Controller must have dual Lan ports to create an isolated network for AV controlled devices.	
9.2	Memory	Minimum 4GB of on-board DDR3 RAM , it must have a commercial grade 8GB eMMC non-volatile memory storage chip, providing reliability in high-access 24/7 environment, controller must have a USB-A Host port available for use with mass storage devices for convenient logging capabilities as well as to connect other devices such as the IR receiver to add IR Controls as an input to the system	



9.3	Others	Controller must supports IPv6, must have 802.1x and HTTPS security, Controllers without support of IPv6 and advanced security integration will not be accepted, Controller must support unlimited number of scripts simultaneously, standard and flexible programming, supporting advance scripting in multi standard languages, also natively support a Flow-based programming environment like low-code/ No-code environment, Controllers lacking the standard architecture, lacking flexibility of programming will not be accepted.	
9.4	Regulatory Compliance	ICES 003, CE EN 55032, AUS/NZ CISPR 32, CE EN 55035, CE EN 62368-1, IEC 62368-1, UL 62368-1, VCCI CISPR 32, RoHS / WEEE compliant	

## 10. Touch Panel

S. No.	Parameters	Specifications	Remarks
10.1	Size and Type	10.1" Wall Mount Top Touch Panel Shall have Capacitive Multi-Touch, IPS LCD with LED backlighting, Display Type: TFT LCD	
10.2	Resolution	1920x1200	
10.3	Aspect Ratio (WH)	Landscape: 16:10	
10.4	Brightness	350 cd/m2 and above	
10.5	Contrast Ratio	800:1 and above	
10.6	Viewing Angle	Vertical $\pm 80^\circ$ , Horizontal $\pm 80^\circ$	
10.7	Memory	SDRAM 4GB LPDDR, Flash 16 GB eMMC	
10.8	Others	Any-Color Side LEDs Illumination, NFC Read/Write Supported, Proximity and Ambient Light Sensor, Ethernet:RJ-45 PoE 802.3af, 10/100 Auto, USB Type C OTG, USB Type 2.0 for Firmware upgrade, Upgradable Android supporting multiple persona like Web Kiosk mode, Room Scheduling, Zoom & Room controllable including HTTPS, 802.1X, TLS 1.3, and Modern Authentication or OAuth 2.0	
10.9	Regulatory Compliance	UL, FCC, & JITEC. Certifications need to submit.	

## 11. 48 Port AV over IP PoE switch

S. No.	Parameters	Specifications	Remarks
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11.1	Ports	48 # 1G Base-T Copper PoE+ Ports ,04 # 1/10G Base-X Fiber SFP+Ethernet: Out-of-band 1G port ,Console: USB-C ,Storage: 2 x USB-A ,Half-width 1 or 2-unit 1U rack mount	
11.2	CPU	Quad-Core Cortex-A57 ARMv8 1.8Ghz 64-bit	
11.3	Memory	RAM: 2 GB DDR4 ,Packet buffer memory: 16 MB ,Flash: 512MB NAND 8-bit ECC	
11.4	Others	CPU: 236W (base) POE budget with internal PSU ,up to 1440W PoE Budget with 3 PSUs(1 internal + 2 modular PSU) in EPS mode ,Stack height: 8 switches Switching fabric: 176 Gbps Line-Rate (non-blocking fabric) ,Throughput: 130.94 Mpps ,Forwarding mode: Store-and-forward Address database size: 16,000 MAC addresses (48-bit MAC address), Network switch should be compatible with av over Ip protocol.	
11.5	Regulatory Compliance	UL, FCC, & JITC. Certification needs to submit.	

## 12. Digital Podium

S. No.	Parameters	Specifications	Remarks
12.1	Construction	Digital Metallic podium , construction with cold rolled steel (CRCA) with ,minimum gauge of 1.5 mm thickness throughout screw -less chassis for enhanced aesthetics and security, Adequate passive ventilation with optional silent cooling fan	
12.2	Display size	21.5 inch	
12.3	Brightness	250 CD/m2	
12.4	Resolutions	full HD	
12.5	OPS-PC	Core i5 , 8 GB Ram, 256 GB SSD, window-11	
12.6	Mechanical	Fixed on motorized lift with Smooth and silent motorized mechanism with adjustable viewing angles, Sliding lockable tray cover to safeguard the display when not in use. Modular Sliding keyboard & Document camera tray with soft-close mechanism. Laser-cut ventilation vents at the base of the chassis equipped with sliding closure panels to allow controlled cable pass-through designed to prevent rodent entry and protect internal electronics, podium should have option for department logo on front side , Caster Wheels: Heavy-duty locking wheels (minimum 4) for smooth movement and stability.	

12.7	I/O Ports	Top panel inputs outputs , 2 x XLR Female Connectors for Gooseneck Microphones ,1 x HDMI IN , 1 type -c(for laptop or external source) ,1 x USB-A 3.0,1 x RJ-45 (LAN) Gigabit Port,1 x Universal AC Power Socket (with 6A protection), 2 Nos Gooseneck Microphone with XLR, Length of minimum 24" or more with Frequency Response 80~18,000 Hz Polar Pattern, Super cardioids With dual band , should have inbuilt 4x2 HDMI switcher 4k (4:4:4) with 02 nos type -c input & 02 nos HDMI inputs auto source deduction along with audio de-embedding.	
12.8	Display	27 - 32 inch with signage solutions hardware / software front display for logo or meeting agenda.	
12.9	Power	Inbuilt (MCB) for surge and overload protection, Power Strip: Rack-mountable PDU (Power Distribution Unit) with minimum 6 Nos 5/15 Amp sockets Mounted internally in 19" rack zone.	
12.10	Regulatory Compliance	ROHS, FCC, CE, ISO Certification need to submit.	

### 13. HDMI Cable

S. No.	Item	Specifications	Remark
13.1	HDMI Cable	HDCEP Compliant Gold- plated 1.8Mtrs. HDMI Cable Patch cord.	

### 14. CAT6 A Cable

S. No.	Item	Specifications	Remarks
14.1	CAT6 A Cable	SF/UTP type. Certification need to submit.	

## B. Sound System

### 15. Mic Cable

S. No.	Item	Specifications	Remarks
15.1	Mic Cable	2 Core Shielded Microphone Cable, Audio, Control & Instrument Cable, 22 AWG stranded (7x30) tinned copper conductors 100 Meter/ Roll.	

### 16. Speaker Cable

S. No.	Item	Specifications	Remarks
16.1	Speaker Cable	Speaker Cable professional audio cable are multi-core PVC has oxygen free copper 2.5sqmm, 100Mtr roll.	

**17. XLR Connectors**

S. No.	Item	Specifications	Remarks
17.1	Male-Female XLR Connectors	Capacitance between contacts $\leq 4$ pF, Contact resistance $\leq 3 \Omega$ , Dielectric strength 1,5 kVdc, Insulation resistance $> 10 G\Omega$ (initial), Rated current per contact 16 A, Rated voltage $< 50$ V.	

**18. XLR floor box**

S. No.	Item	Specifications	Remarks
18.1	XLR floor box	XLR FLOOR BOX WITH 8 NOS XLR CONNECTOR	

**19. Floor box**

S. No.	Item	Specifications	Remarks
19.1	Floor box	floor box with 2 Nos Lan port, 1 power, 3 xlr port	

**20. Handheld Microphone**

S. No.	Item	Specifications	Remarks
20.1	Type	Wireless Handheld transmitter with condenser type with a super-cardioid pick-up pattern, Automatic frequency and interference management,	
20.2	Sensitivity	1.6 mV/Pa, Maximum sound pressure level: 152 dB, supports 256 bit AES encryption	
20.3	Parameter	Frequency range : 1,880 to 1,900 MHz, Frequency response: 20 to 20,000 Hz, Signal-to-noise ratio: $> 90$ dB(A), Dynamic range: $> 120$ dB(A), Sampling rates: 24 bit/48 kHz, RF output power : up to 80 W or more	
20.4	Operating time	15 hour.	
20.5	Certifications	BIS Certifications need to submit.	

**21. Lapel microphone**

S. No.	Item	Specifications	Remarks
21.1	Lapel microphone	Wireless Body-pack transmitter with condenser type omni-directional clip-on microphone,	
21.2	Sensitivity	20 mV/Pa, Maximum sound pressure level: 130 dB	

21.3	Power	Operating time: 15 hour. RF output power : up to 80 W or more	
21.4	Parameter	Frequency range : 1,880 to 1,900 MHz, Frequency response: 20 to 20,000 Hz, Signal-to-noise ratio: > 90 dB(A), Dynamic range: > 120 dB(A), Sampling rates: 24 bit/48 kHz, Automatic frequency and interference management, Supports 256 bit AES encryption, It should be remotely controlled with centralized software.	
21.5	Certifications	BIS Certifications need to submit.	

## 22. Head worn microphone

S. No.	Item	Specifications	Remarks
22.1	Type	Wireless Body-pack transmitter with Omni-directional head worn microphone	
22.2	Parameter	Supports 256 bit AES encryption, Frequency range: 1,880 to 1,900 MHz, Frequency response: 20 to 20,000 Hz, Signal-to-noise ratio: > 90 dB(A), Dynamic range: > 120 dB(A), Sampling rates: 24 bit/48 kHz, Automatic frequency and interference management, It should be remotely controlled with centralized software.	
22.3	Sensitivity	5 mV/Pa, Maximum sound pressure level: 140 dB	
22.4	Power	RF output power : up to 80 W or more, Operating time: 15 hour	
22.5	Certifications	BIS Certifications need to submit.	

## 23. 4-Ch antenna

S. No.	Item	Specifications	Remarks
23.1	4-Ch antenna	Four channel receiver with integrated auto mixer and the analog mix output, Automatic Gain Control, Automatic Frequency management, AES 256 encryption, Frequency range: 1880 - 1930 MHz, 2-port Dante (Primary & Secondary), PoE, remotely control via centralized software to monitor the system. Supports wall and ceiling mounting options. BIS Certification need to submit.	

## 24. Dante Based Digital Audio Mixer

S. No.	Item	Specifications	Remarks
24.1	Dante Based Digital Audio Mixer	Digital Mixer 38in/24out 96kHz Processing with Dante 24 XLR/Jack 'Combi' Mic/Line Input Sockets; 16 XLR Output Sockets; 16x16 48/96 kHz Dante interface with dedicated locking EtherCon port. BIS Certification need to submit.	

**25. Instrumental mike**

S. No.	Item	Specifications	Remarks
25.1	Instrumental mike	wired electret condenser instrument Microphone having super-cardioid or better pickup pattern, should have free field sensitivity on no load of 3mV/PA or better, Max Sound Pressure Level of 138db or more, should have frequency response of 42Hz - 20000Hz or better, Nominal impedance of 150ohm or less, should be phantom powered etc. as required. Certification need to submit.	

**26. Vocal mike**

S. No.	Item	Specifications	Remarks
26.1	Vocal mike	Wired dynamic handheld Microphone having cardioid or better pickup pattern, should have free field sensitivity on no load of 2.7mV/PA or better, should have frequency response of 42Hz - 16000Hz, Nominal impedance of 350ohm or less. Certification need to submit.	

**27. Charging way**

S. No.	Item	Specifications	Remarks
27.1	Charging way	4 bay network charge, Remote Charging status Monitoring to OEM own software or third party controller, each bay should have 4 LEDs to indicate the corresponding battery status of the microphone, two hour or less for full charging, The charger shall have an RJ-45 network socket and shall support IPv4 and IPv6 network addressing. Certification need to submit.	

**28. DSP**

S. No.	Item	Specifications	Remarks
28.1	DSP	19" 1RU processor mainframe with sixteen user-configured card slots (16 blank cards included). Integrated license-activated AEC. Dual-core processing 40-bit floating DSP. Rear panel includes an Ethernet module with an RJ45 connector and an internal power Supplying of connection with a Certification need to submit.	
28.2	Sampling rates	Selectable 48 & and 96kHz.	



28.3	I/O	Built-in Dante channel of 64x64 I/O channels of Dante network audio. Dual RJ45 Dante and single RJ45 Ethernet connectors. 10 Mic/Line Inputs, 8 Line output. 32-bit digital to analog converters. 2ch input + 2ch output USB audio card with activated AEC.1 GPIO card.	
28.4	Display	Front panel OLED display.	

**29. Media Audio point**

S. No.	Item	Specifications	Remarks
29.1	Media Audio point	Dante based XLR wall plate for audio output, minimum XLR audio point required 8 nos with all required accessories wall plate or backend equipment	

**30. Sub woofer**

S. No.	Item	Specifications	Remarks
30.1	Sub woofer	Dual 15-inch Subwoofer frequency Range (-10dB) 32 Hz - 1 kHz, Frequency Response ( $\pm 3$ dB) 38 Hz - 1 kHz, Transducer Power Rating (AES) 1600 W (6400 W peak), 2 hrs Input Modes Drivers Parallel / Drivers Discrete, System Power Rating 1350 W (5400 W peak), 100 hrs. Maximum SPL (1m) 35 Hz - 400 Hz: 132 dB-SPL cont avg (138 dB peak) System Sensitivity 35 Hz - 400 Hz: 100 dB-SPL, 1W (2.0V) @ 1m ,Nominal Impedance 4 ohms in parallel-drive mode 2 x 8 ohms in discrete-drive mode ,LF Driver 2 x 2265H-1, 380 mm (15 in) dia., 75 mm (3 in) Dual Coil Dual Gap neodymium Differential Drive® drivers Enclosure Rectangular cabinet, 16 mm (5/8 in) exterior grade 11-ply birch plywood.	

**31. Audio Amplifier 2400W**

S. No.	Item	Specifications	Remarks
31.1	Power	4 x2400W amplifier, 140Vrms and 200Vrms Cooling Continuously variable speed forced air, front to back air flow. Certification need to submit.	
31.2	Frequency Response	$\pm 0.25$ dB (at 8 $\Omega$ , 20Hz - 20kHz)	
31.3	Total Harmonic Distortion	0.35% (at full rated power, 20Hz - 20kHz), Damping Factor (20Hz to 100Hz) >5000	
31.4	Load Impedance (Stereo/Dual Mode)	2 $\Omega$ - 16 $\Omega$ ; 70Vrms and 100Vrms, Load Impedance Bridge Mono 4 $\Omega$ - 16 $\Omega$	

**32. DOLBY PROCESSOR**

S. No.	Item	Specifications	Remarks
32.1	DOLBY PROCESSOR	Dolby processor surround 7.1 & 5.1 formats, 16 channel digital output, supporting AES67 OR Blulink protocols should support 1x GB Ethernet (100 Base-T/ RJ45) , 1 x usb 3.0, 1 x HDMI 2.0 INPUT ,1 x HDMI 2.0 output. Certification need to submit.	

**33. Dolby player**

S. No.	Item	Specifications	Remarks
33.1	Dolby player	Supported formats include HEVC, H.264, AV1 and ProRes HDR with Dolby Vision, HDR10+/HDR10 and HLG, supported formats include AAC, MP3, Apple Lossless, FLAC, Dolby Digital, Dolby Digital Plus and Dolby Atmos, 10-core CPU with 4 performance cores and 6 efficiency cores 10-core GPU Hardware-accelerated ray tracing 16-core Neural Engine 120GB/s memory bandwidth. Certification need to submit.	

**34. Network Switch**

S. No.	Item	Specifications	Remarks
34.1	Ports	High-power 24-port Gigabit PoE+ Smart Managed Switch designed for converged network applications. The device shall feature twenty-four (24) 10/100/1000 Mbps copper ports. Additionally, the unit must include four (4) dedicated Gigabit SFP fiber uplink interfaces for long-distance connectivity.	
34.2	Security & Standards	Compliant with IEEE 802.3at (PoE+) standards, providing a total system power budget of at least 380 Watts to support high-density deployments of VoIP phones, IP cameras, and wireless access points. The switch shall support comprehensive Layer 2 networking features including VLANs (Auto-VoIP, Auto-Video), Link Aggregation (LACP), Spanning Tree Protocol (STP/RSTP/MSTP), and IGMP Snooping. It must also provide basic Layer 3 static routing (IPv4/IPv6) capabilities (at least 32 static routes). Security features shall include Access Control Lists (ACLs), Port Security, and 802.1x authentications.	
34.3	Switching fabric	The switching fabric shall have a non-blocking capacity of 56 Gbps with a forwarding rate of at least 41.6 Mpps.	
34.4	Management	Management capabilities must include a local web-based GUI, standard SNMP (v1, v2c, v3), and support for optional remote cloud-based management and monitoring.	

34.5	Mechanical	The enclosure must be 1U rack-mountable with active, temperature-controlled fan cooling.	
34.6	Certification	Certification need to submit.	

### 35. Access Point for Internet

S. No.	Item	Specifications	Remarks
35.1	Type	Dual-Band Wi-Fi 6 (802.11ax) Wireless Access Point designed for high-density commercial environments. The device shall feature a multi-gigabit uplink interface consisting of one 2.5 Gigabit Ethernet (2.5GBASE-T) port to prevent bottlenecks, with support for PoE+ (IEEE 802.3at) for flexible deployment.	
35.2	Wireless Throughput	The unit must offer an aggregate wireless throughput of at least 1.8 Gbps (AX1800 class), utilizing 2x2 MU-MIMO and OFDMA technology on both the 2.4GHz and 5GHz bands to handle multiple simultaneous client connections efficiently.	
35.3	Management	Management capabilities shall include options for local web-based configuration and optional remote cloud-based management/monitoring.	
35.4	Security Standards	The access point must support advanced security standards including WPA3 Enterprise, VLAN tagging (802.1Q), and MAC-based Access Control Lists. It shall support multiple SSIDs (at least 8) and seamless roaming protocols (802.11k/v/r) to ensure uninterrupted connectivity for mobile users.	
35.5	Physical	The hardware must be ceiling or wall-mountable and include a Kensington lock slot for physical security. Certification need to submit.	

### 36. Patch Panel

S. No.	Item	Specifications	Remarks
36.1	Type	19-inch rack-mountable Category 6 Unshielded Twisted Pair (UTP) loaded patch panel, fully populated with 24 RJ45 ports within a 1U height.	
36.2	Standard	The panel shall comply with or exceed ANSI/TIA-568.2-D and ISO/IEC 11801 Class E component specifications for Gigabit Ethernet transmission.	
36.3	Quality	The modular jack contacts must be constructed of phosphor bronze with a minimum of 50 micro-inches of gold plating over nickel to ensure superior conductivity and corrosion resistance.	
36.4	Termination	The rear termination blocks shall accommodate 22 to 26 AWG solid conductors and support both T568A and T568B wiring schemes, utilizing dual-type IDC terminals compatible with both 110 and Krone impact tools. The unit must feature an integrated or detachable rear cable management bar to provide proper strain relief and bend radius control. The front	

		faceplate shall include dedicated areas for port labeling and identification. Certification need to submit.	
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### 37. Audio Patch Cord

S. No.	Item	Specifications	Remarks
37.1	AUDIO PATCH CORD	1 mtr Audio patch cord	

### 38. Installation Work

S. No.	Item	Specifications	Remarks
38.1	Installation Work	Re- programming and integration of existing system with new one, fine tuning ,replacement of all XLR connectors and patch cords along with new items Installation.	

### C. Stage lighting

S. No.	Item	Specification	Remark
39	Moving Head :Beam/Spot/ wash, Max Power : 400W LED Engine	Narrow Beam Min.6°, Display On board control, Pan/Tilt rotation : 540°/270° (16bit) , Static Gobo :9gobos ,Gobo-flow effect, Gobo- shake,Bi-directional rotation ,0-100 Linier dimming ,Colours : One colour wheel (9 +white, Rainbow-flow effect) ,Prism : 5+1 facet prism , Focus: Motorised linear focus ,RDM , DMX512, BIS	
40	180W Warm White Source Led Par Light	Max Power - 200W. Lamp: 3W* 54 leds , Voltage - AC100~240V, Standard Optical System -19°/25°, Dimming - 16Bit,DMX Master/Slave/Auto/ Sound Mode, Channel DMX: 3/4/5/6/11, DMX,BIS	
41	180W RGBW Source Led Par Light	Max Power - 200W. Lamp: 3W* 54 leds , 19°/25°, Dimming - 16Bit,DMX Master/Slave/Auto/ Sound Mode, Channel DMX: 3/4/5/6/11, DMX,BIS	

42	300W COB White LED Source Profile Light	Max Power - 300W. , Standard Optical System -18°-38° manual Zoom, CRI-92, CCT 3200K/5600k Optional,HD Optical System: Clean Sutter Cut Beam, Flicker Free With Selectable PWM, Silent Operation For Theatre and Studio Use , Dimming - 16Bit,DMX Master/Slave/Auto/ Sound Mode, Channel DMX:2, DATA Out/In Socker: 3pin /5pin DMX/RDM/Roatory, BIS	
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## D. Work Station

### 43- Digital Audio Work Station

S.N.	Specifications	Description
43.1	Form Factor	Tower
43.2	Processor	Intel i7 Processor latest Generation/ AMD Ryzen™ Threadripper™ PRO 9000 Series OR equivalent
43.3	Chipset	Intel chipset of 600 Series/ AMD chipset of AM 5600-series OR better
43.4	Memory	Minimum 32GB, 5600Mhz DDR5 ECC memory or better, expendable upto 128GB or more
43.5	Hard Disk Drive	Minimum 1x512 GB PCIe M.2 2280, TLC PCIe Gen4, SSD, SED ready  Minimum 1TB Hard Disk, Workstation should support at least 3 SATA HDDs for future expandability
43.6	Expansion Slots	Minimum 4 PCIe slots including one PCIe x 16  Minimum 3 M.2 slots
43.7	Graphic Card	Equivalent to NVidia T400, 4GB or higher, system should support up to 48GB graphic card for future expandability
43.8	I/O Ports	Minimum 6 USB port out of which-  Min 4x USB Type 3.2  Min 2x USB Type 3.2 Gen1  HDMI port- 1 No  Universal Audio Jack- 1 No

		1x RJ45 Network Connector  1x Audio Line Out, C-type connector port-1
43.9	OS Certification	Workstation should support following OS: Windows 11 Professional for Workstation, 64bit or higher  (Certifications must be available in the public domain against the quoted model name)
43.10	Networking	Intel Wi-Fi (2x2) and Bluetooth 5.2 or higher.  Intel Ethernet Connection 10/100/1000 or better
43.11	Audio	Intelligent HD Audio delivers audio with internal or external speaker.
43.12	Power Supply	Minimum 1000W power supply unit, 92 % Efficient or better
43.13	OS	Windows 11 Professional
43.14	Monitor	Minimum 24" or higher monitor (min. 1920x 1080 screen resolution Connectivity option: 1 x Display Port , 1 x VGA, 1 x HDMI Port, Monitor Stand must be height adjustable features
43.15	Keyboard & Mouse	Wired Keyboard & Mouse, should be of Same Workstation OEM make
43.16	Security	integrated Trusted Platform Module (TPM 2.0), Chassis Intrusion Switch / sensor Setup/BIOS Password, I/O Interface Security
43.17	Regulatory Compliance	Energy Star, EPEAT Gold India, FCC,UL, CE and Energy Star 8.0
43.18	Performance enhancement software	OEM Bundled Software for Workstation
43.19	Warranty	5 Years comprehensive Onsite OEM Warranty,  (OEM warranty status must available in the OEM service website/public domain against each serial number)
43.20	OEM ISO	27001, 9001, 14001, 45001, Hardware TPM 2.0



### E. Acoustics

S. No.	Item Description	Qty	Unit
44	<b>Side walls upto 12'</b> Supply & Fixing of Elegant Wood Tile 300x1200x9 mm with square edge density 1050kg/m <sup>3</sup> covered with laminate on front side and Acoustics fibre on the back side, thus making it acoustically absorptive, water resistance, fire resistant. The tiles are anti sag. To be installed on G.I studs 00x600mm centre to centre 2400mm X 50mm web thickness 0.5mm, flanges 15 & 50mm fully knurled giving it high strength, hot dipped galvanized steel with 120GSM zinc coating specially designed for Acoustic vibration management and long life with a backing of HIMALYAN ACOUSTICS. 1000 GSM absorb wool tested as per Fire Retardant ASTMD 635-1991/Insulation and IS 15061-2002 for excellent results.	1,071.00	SQFT
45	<b>Side Walls Above 12'</b> Supplying & fixing 'Aphony FIBRETTE' 20mm tiles made of Wood Fibre cement composites (Non-Magnetite Bonded) with an option of colors as per the choice of the Architect/ person in charge. Has excellent noise absorption of 1 NRC as per ISO: 354-1985 and ASTM 423-90 a, Density 400 Kg/m <sup>3</sup> , meets stringent Fire Ratings ASTMD-876 and Fire Class -1 and Class P-not easily ignitable as per BS-476-Part 5,6,7, weather resistance as per IS 3308, Thermal Insulation as per IS:3346-1980 with relative humidity of 90% RH at 60° Celsius (140° Fahrenheit) for 15 days= No deterioration. Tested as per En 131682001 and are RoHS Complaint and Anti-Bacterial test as per JIS-Z2801-2010. To be installed on G.I studs 600x600mm centre to centre 2400mm X 50mm web thickness 0.5mm, flanges 15 & 50mm fully knurled giving it high strength, hot dipped galvanized steel with 120GSM zinc coating specially designed for Acoustic vibration management and long life with a backing of Himalayan acoustics 1000 GSM absorb wool tested as per Fire Retardant ASTMD 635-1991 /Insulation and IS15061-2002 for excellent results.	1,606.00	SQFT
46	<b>STAGE FLOORING</b> Supply and fixing of Teak wood flooring with tongue and groove system of size 510x90x20mm. Termite treated seasoned. Wooden flooring directly installed Silent board in the thickness of 26mm made of Compressed Wood Fiber Cement Composites 1200Kg/m <sup>3</sup> with a backing of Anti vibration Pad mechanically screwed on all the Partition walls, ceilings and floor with joints properly sealed with epoxy acoustic sealant to avoid any sound leakage. The product conforms as per ASTMD – 876. These sheets are available in the sizes of 1218x1218mm These slim panels mean there is little compromise on living space despite high performance. It is easy to install. These panels give sound reduction of STC 43.	2,100.00	SQFT

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47	<b>Dismantling of Existing flooring and civil work</b> to make provision for subwoofer and front fill speaker etc. as per site requirement.	1,950.00	SQFT
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### **SECTION-III: BILL OF MATERIALS**

S. No.	Equipment/Items	Quantity	Units	Specification/Clause Reference	
<b>A.</b>	<b>Video Part</b>				
1	Indoor LED Video Wall	1	Nos.	SECTION-II Clauses of 1	
2	75 INCH Display	2	Nos.	SECTION-II Clauses of 2	
3	55 INCH Display	1	Nos.	SECTION-II Clauses of 3	
4	Professional PTZ Camera	3	Nos.	SECTION-II Clauses of 4	
5	Camera Control Joystick	1	Nos.	SECTION-II Clauses of 5	
6	Recording & Streaming device	1	Nos.	SECTION-II Clauses of 6	
7	HDMI Encoder	9	Nos.	SECTION-II Clauses of 7	
8	HDMI Decoder	10	Nos.	SECTION-II Clauses of 8	
9	AV Controller	1	Nos.	SECTION-II Clauses of 9	
10	Touch Panel	1	Nos.	SECTION-II Clauses of 10	
11	48 Port AV over IP PoE switch	1	Nos.	SECTION-II Clauses of 11	
12	Digital Podium	2	Nos.	SECTION-II Clauses of 12	
13	HDMI Cable	20	Nos.	SECTION-II Clauses of 13	
14	CAT6 A Cable	900	Mtr.	SECTION-II Clauses of 14	
<b>B.</b>	<b>Sound System</b>				
15	Mic Cable 100m/Roll	2	Roll	SECTION-II Clauses of 15	
16	Speaker Cable 100m/Roll	2	Roll	SECTION-II Clauses of 16	
17	XLR Connectors Male/Female	50	Pairs	SECTION-II Clauses of 17	
18	XLR floor box	2	Nos.	SECTION-II Clauses of 18	
19	Floor box	1	Nos.	SECTION-II Clauses of 19	
20	Handheld Microphone	4	Nos.	SECTION-II Clauses of 20	
21	Lapel microphone	2	Nos.	SECTION-II Clauses of 21	
22	Head worn microphone	2	Nos.	SECTION-II Clauses of 22	
23	4-Ch antenna	2	Nos.	SECTION-II Clauses of 23	
24	Dante Based Digital Audio Mixer	1	Nos.	SECTION-II Clauses of 24	
25	Instrumental mike	6	Nos.	SECTION-II Clauses of 25	
26	Vocal mike	6	Nos.	SECTION-II Clauses of 26	
27	Charging way	2	Nos.	SECTION-II Clauses of 27	
28	DSP	1	Nos.	SECTION-II Clauses of 28	
29	Media Audio point	1	Nos.	SECTION-II Clauses of 29	
30	Sab woofer	2	Nos.	SECTION-II Clauses of 30	
31	Audio Amplifier 4X2400W	1	Nos.	SECTION-II Clauses of 31	
32	Dolby Processor	1	Nos.	SECTION-II Clauses of 32	
33	Dolby player	1	Nos.	SECTION-II Clauses of 33	
34	Network Switch	1	Nos.	SECTION-II Clauses of 34	
35	Access Point for Internet	5	Nos.	SECTION-II Clauses of 35	
36	Patch Panel	1	Nos.	SECTION-II Clauses of 36	
37	Audio Patch Cord	10	Nos.	SECTION-II Clauses of 37	

38	Installation Work	1	Job	SECTION-II Clauses of 38	
<b>C.</b>	<b>Stage Lights</b>				
39	Moving Head :Beam/Spot/wash, Max Power: 400W	8	Nos.	SECTION-II Clauses of 39	
40	180W Warm White Source Led Par Light	8	Nos.	SECTION-II Clauses of 40	
41	180W RGBW Source Led Par Light	8	Nos.	SECTION-II Clauses of 41	
42	300W COB White LED Source Profile Light	3	Nos.	SECTION-II Clauses of 42	
<b>D.</b>	<b>Work Station</b>				
43	Digital Audio Work Station	1	No.	SECTION-II Clauses of 43	
<b>E.</b>	<b>Acoustic Works</b>				
44	Refurbishing of Side walls upto 12'	1071	SQFT	SECTION-II Clauses of 44	
45	Refurbishing of Side Walls Above 12'	1606	SQFT	SECTION-II Clauses of 45	
46	STAGE FLOORING	2100	SQFT	SECTION-II Clauses of 46	
47	Dismantling of Existing flooring and civil work	1950	SQFT	SECTION-II Clauses of 47	
<b>F.</b>	<b>Others</b>				
48	Annual charges for Maintenance after warranty period	1	Job	<b>SECTION-I Clauses 6.3</b>	
49	Annual charges for operational Men power for conducting routine programme in Rangbhavan for next 3+2 years.	1	Job	<b>SECTION-I Clauses 6.4</b>	

### Format of Compliance statement

[illegible]

### **Format for BOM statement by Tenderer**

[illegible]