

**GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
LIQUID PROPULSION SYSTEMS CENTRE (LPSC-B)
BANGALORE**

**Tender for Supply and Installation of LED video wall and AV
equipments at LPSCB Auditorium**

Bids to be submitted online

**Tender No.: LPSC-B/Liquid Propulsion Systems
Centre,Bengaluru/LB202400012401 dated 16-12-2024**

A. Tender Details

Tender No :	LPSC-B/Liquid Propulsion Systems Centre,Bengaluru/LB202400012401
Tender Date :	16-12-2024
Tender Classification:	GOODS
Purchase Entity :	Liquid Propulsion Systems Centre,Bengaluru
Centre :	LIQUID PROPULSION SYSTEMS CENTRE (LPSC-B)

LED video wall and AV equipments at LPSCB Auditorium

Supply and Installation of LED video wall and AV equipments at LPSCB Auditorium

A.1 Tender Schedule

Tender Publish Date :	16-12-2024 14:00
Bid Clarification Due Date :	09-01-2025 14:00
Bid Submission Start Date :	23-12-2024 14:00
Bid Submission Due Date :	23-01-2025 14:00
Bid Opening Date :	23-01-2025 14:30
Price Bid Opening Date :	06-02-2025 14:00

A.2 Pre-bid Meeting Details

Date :	23-12-2024 10:00
Place :	Liquid Propulsion Systems Centre, Bengaluru
Location :	80 Feet Road, HPO, HAL 2nd Stage, Indiranagar, Bengaluru 560008
Centre :	LIQUID PROPULSION SYSTEMS CENTRE (LPSC-B), BANGALORE, KARNATAKA

Details :

Pre-bid meeting along with physical inspection at the site is scheduled on 23/12/2024 at 10:00 AM. Participation in pre-bid meeting is mandatory failing which submitted offer will not be considered for further evaluation. Participants are requested to send their willingness with details of a representatives on company letter head to Email ID: purchase@lpsc.gov.in for participation in Pre-bid meeting on or before 20/12/2024, 04:00 PM. The details of representative with any recognized Identity like Aadhar card, Driving license, etc. is required for arranging the gate pass to enter into the premises of LPSC-B. Maximum 02 representative will be allowed from a vendor being participants in Pre-bid meeting & Physical site inspection.

B. Tender Attachments

Technical Write-up/Drawings

Document : compliance matrix

Document : instructions to vendor

Document : terms and conditions - CSMC

Document : Technical specification

Document : scope of work

Document : list of annexure

Instructions To Vendors

7. Instructions to Vendors

1. LPSC(B) invites offers through eprocurement portal (<https://eproc.isro.gov.in>) for the supply / service of items as listed in the Tender document.
2. Prospective vendors interested in participating in the tendering process need to get registered in the e-procurement portal by using Digital Signature Certificate. Offers submitted through our online portal only shall be considered and offers received through fax or email or in person shall not be considered.
3. The Tenderers are requested to update their address and contact details, if necessary and submit the Bids online at least two days prior to closing date to avoid last minute system / network related problems. In case of any technical issues, tenderers may write to helpdesk team (eprocure@vssc.gov.in, egps@lpsc.gov.in) for resolution. Request for the extension of the due date for such instances shall not be considered.
4. GST @ 5% is applicable for following goods mentioned under Sl. No. 243B as per Department of Revenue Notification No. 25/2018 - Integrated Tax (Rate) dated 31/12/2018 (Amendment to Notification Nos. 07/2018 dated 25/01/2018 and 01/2017 dated 28/06/2017) and Department of Revenue Notification No. 24/2018 - Central Tax (Rate) dated 31/12/2018 (Amendment to Notification Nos. 06/2018 dated 25/01/2018 and 01/2017 dated 28/06/2017) and Government of Karnataka Notification No. 24/2018 dated 31/12/2018 (Amendment to Notification Nos. 06/2018 dated 25/01/2018 and 01/2017 dated 29/06/2017).

"Scientific and technical instruments, apparatus, equipment, accessories, parts, components, spares, tools, mock ups and modules, raw material and consumables required for Launch Vehicles and Satellites and Payloads"

5. LPSC(B), ISRO is eligible for Customs Duty Concession vide Notification No.12/2012-Customs dated 17/03/2012 and Notification No. 50/2017-Customs dated 30/06/2017. Necessary Customs Duty Concession Certificate shall be provided if applicable.

6. Offer Validity: The offer shall be valid for a period of 90 days (for Single Part Tender) and 120 days (for Two Part Tender) from the date of opening of the tender or any other period as specified in the Tender document. Offers with lesser validity period than that specified are liable for exclusion from the procurement process.

7. In case of Two Part Tender, Tenderers shall not mention any kind of price element in Techno-Commercial Bid. If any Price element is mentioned in the Techno-Commercial bid, their offer shall be liable for rejection.

8. LPSC(B) reserves the right to accept or reject any quotation in part or in full or part without assigning any reason thereof. LPSC(B) shall be under no obligation to accept the lowest tender and reserves the right to accept whole or any part of the tender or part of the quantity offered and the Tenderers shall supply the same at the rates quoted.

9. Bank Details: Tenderer shall provide their bank details such as IFSC code, IBAN No. , SWIFT etc. along with their offer which shall be not be changed till completion of supply/service.

10. Applicable Law: The Contract shall be governed by Indian Law for the time being in force and jurisdiction shall lie in the Courts of India.

11. Only Class-I and Class-II Local suppliers as per Public Procurement Policy (Preference to Make in India) Order, 2017 are eligible to participate in the bid unless otherwise specified in the Tender document.

12. As far as implementation of Public Procurement Policy (Preference to Make in India) Order, 2017 is concerned, the Office Orders vide No. P-45021/2/2017-B.E-II dated 15/06/2017, which is partially modified by Order No. P-45021/2/2017-PP(BE-II) dated 28/05/2018, Order No. P-45021/2/2017-PP(BE-II) dated 29/05/2019, Order No. P-45021/2/2017-PP (BE-II) dated 04/06/2020 and Order No. P-45021/2/2017-PP (BE-II) dated 16/09/2020 and subsequent Amendments issued by the Department for Promotion of Industries and Internal Trade (DPIIT), Ministry of Commerce and Industry regarding Class-I / Class-II local suppliers, Purchase preference, verification of local contents etc. shall be applicable to this tender unless otherwise specified in the Tender document.

Therefore, bidders may ensure compliance of the same while submitting tenders.

13. Price Preference shall be extended to the MSEs under the Public Procurement Policy for MSEs formulated under the Micro, Small and Medium Enterprises Development Act, 2006 unless otherwise specified in the Tender document. Such MSEs shall produce documentary proof of registration as per provisions of the Policy i.e. registration with District Industries Centre (DIC) or Khadi and Village Industries Commission (KVIC) or Khadi and Industries Board (KVIB) or Coir Board or National Small Industries Commission (NSIC) or Directorate of Handicrafts and Handlooms or Udyog Aadhar Memorandum or any other body specified by Ministry of MSME.

14. 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. Competent Authority for the purpose of registration shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT).

15. Resolution of Disputes: Any dispute, disagreement or question arising out of or relating to or in consequence of the contract or to its fulfillment, or the validity of enforcement thereof which cannot be settled mutually, or the settlement of which is not herein specifically provided for, shall within 30 (thirty) days from the date either party informs the other in writing that such dispute or disagreement exists be referred to arbitration by the sole arbitrator. The Arbitrator shall be appointed as per the Indian Arbitration and Conciliation Act 1996 and proceedings will be conducted in Bangalore. The Arbitration proceedings shall be conducted in accordance with and subject to the Arbitration and Conciliation Act 1996 (Act 26 of 1996) as amended from time to time and the decision of the Arbitrator shall be final and binding on the parties thereto. Each party shall bear its own cost of preparing and presenting its case. The cost of Arbitration including the fees and expenses of the Arbitrator shall be shared equally by the parties unless the award provides otherwise. Subject to provisions of this clause, the courts at Bangalore shall have exclusive jurisdiction. Performance under this Contract shall, however continue during Arbitration proceeding and no payment due or payable by the parties hereto shall be withheld unless any such payment is/or forms a part of the subject matter of the Arbitration proceedings.

16. Force Majeure: Neither party shall bear responsibility for the complete or partial non-performance of any of his obligations if the non-performance results from such force majeure circumstances such as, but not restricted to, flood, fire, earthquake, civil commotion, sabotage, explosion, epidemic, quarantine restriction, strike, lock-out, freight embargo, acts of the Government, acts of public enemy and other acts of God as well as war or revolution, military operation, blockade, acts or actions of State authorities or any other circumstance beyond the control of the parties provided the other party is notified in writing within 21 days from the date of commencement of the unforeseeable event.

C. Bid Templates

C.1 Technical Bid - Supply and Installation of LED video wall and AV equipments at LPSCB Auditorium

1. LED WALL -1.88mm Pixel pitch indoor active LED video wall with mounting structure and controller

Item specifications for LED WALL

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Pixel pitch	1.88mm or less	Yes / No / Explain		
2	Pixel matrix (Width x Height)	3200 x1800 or higher	Yes / No / Explain		
3	Display dimensions (Width x Height)	6.0 Meter x 3.3 Meter or more	Yes / No / Explain		
4	Pixel configuration	3 in 1 configuration or 4 in 1 configuration	Yes / No / Explain		
5	LED Packaging	SMD or COB or Flip-Chip or latest	Yes / No / Explain		
6	LED Life time	1,00,000 hours(with50%Brightness)or higher	Yes / No / Explain		
7	Aspect ratio	16:9	Yes / No / Explain		
8	Brightness	600 nits or better	Yes / No / Explain		
9	Contrast ratio	5000:1 or better	Yes / No / Explain		
10	Viewing angle	140 x 140 or better	Yes / No / Explain		
11	Display colours	14 bit or better	Yes / No / Explain		
12	Refresh rate	3840 Hz or better	Yes / No / Explain		
13	HDR support (HDR 10 or HDR10+or Higher)	Yes	Yes / No / Explain		
14	Cabinet material	Die-cast Aluminium	Yes / No / Explain		

15	Service access	Front	Yes / No / Explain		
16	IP rating	IP20 or better	Yes / No / Explain		
17	Mounting type	Floor mounting	Yes / No / Explain		
18	Power input	230V at 50 Hz	Yes / No / Explain		
19	Operating temperature	0 to 40 degree Celsius or better	Yes / No / Explain		
20	Operating humidity	20% to 75% or better	Yes / No / Explain		
21	Certifications / Regulatory	BIS/ ISO certifications if available	Yes / No / Explain		
22	10% additional video wall panels as spare cabinets with tiles to be supplied	Yes	Yes / No / Explain		
23	LED video wall controller		-		
24	Input	4 nos. or more (including HDMI 2.0 or better – 3 nos.)	Yes / No / Explain		
25	Output (Gigabit Ethernet)	16 nos. or as per the requirement to support the resolution 3200 x1800 or higher with HDR	Yes / No / Explain		
26	Control port (Ethernet)	1 no. or more	Yes / No / Explain		
27	HDCP Support	Yes	Yes / No / Explain		
28	Input resolution Supported	3840 x 2160 @60 Hz or better	Yes / No / Explain		
29	Pixel capacity	3200 (H) x 1800 (V) or better	Yes / No / Explain		
30	Licensing	All software and firmware licenses must be perpetual and must be operational from Day1	Yes / No / Explain		
31	Mounting Type.	19 inch rack mountable	Yes / No / Explain		
32	Power input.	230V at 50 Hz.	Yes / No / Explain		

33	Operating temperature.	0 to 40 degree Celsius or better	Yes / No / Explain		
34	Operating humidity.	20% to 75% or better	Yes / No / Explain		
35	The LED controller unit should be compatible with the LED cabinet/tiles	Yes	Yes / No / Explain		

2. LED wall Processor - Video wall Processor

Item specifications for LED wall Processor

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Input (HDMI 2.0 or better)	4 nos. or more	Yes / No / Explain		
2	Output (HDMI 2.0 or better)	4 nos. or more	Yes / No / Explain		
3	Drag & Drop, resize of input sources on any location of the video wall in real time.	Yes	Yes / No / Explain		
4	Built –in- Scaler	Yes	Yes / No / Explain		
5	All outputs to be individual	yes	Yes / No / Explain		
6	HDR support (HDR 10 or HDR 10+ or better)	Yes	Yes / No / Explain		
7	Control port (Ethernet port)	1 no. or more	Yes / No / Explain		
8	HDCP Support	Yes	Yes / No / Explain		
9	Input resolution Supported	3840 x 2160 @60 Hz or better	Yes / No / Explain		
10	Licensing	All software and firmware licenses must be perpetual and must be operational from Day 1	Yes / No / Explain		
11	Mount	19 inch rack mountable	Yes / No / Explain		
12	Power input	230V at 50 Hz.	Yes / No / Explain		

13	Operating temperature	0 to 40 degree Celsius or better	Yes / No / Explain		
14	Operating humidity	20% to 75% or better	Yes / No / Explain		

3. LED TV 55 INCH(55 INCH LED TV)

Item specifications for LED TV 55 INCH

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Technology	LED	Yes / No / Explain		
2	Screen size (Diagonal) Minimum	55 inches (137cm-142cm range) or better	Yes / No / Explain		
3	Resolution (Pixels) Minimum	(3840x2160) UHD	Yes / No / Explain		
4	Panel technologies	IPS/VA	Yes / No / Explain		
5	Aspect Ratio	16:9	Yes / No / Explain		
6	Brightness Nits (Minimum)	500 or better	Yes / No / Explain		
7	Viewing angle	178:178	Yes / No / Explain		
8	Mounting	For both displays, Wall mount & tiltable floor mount to be provided. Tiltable floor mount to be positioned on the dias for the VIPS seated	Yes / No / Explain		
9	Connectivity	HDMI port (2 Nos), Audio, USB port	Yes / No / Explain		
10	Ethernet port	Yes	Yes / No / Explain		

4. LED Monitor - 27 INCHES

Item specifications for LED Monitor

SI No	Specification	Value	Compliance	Offered Specification	Remark
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1	Technology	LED	Yes / No / Explain		
2	Type	Bezel less or frameless or slim Bezel	Yes / No / Explain		
3	Display Technology	IPS / VA	Yes / No / Explain		
4	Screen size (diagonal)	27 inches (65cm to 70cm) or more	Yes / No / Explain		
5	Resolution (pixels)	1920 x 1080 or better	Yes / No / Explain		
6	Aspect ratio	16:9	Yes / No / Explain		
7	Brightness Nits	250 or better	Yes / No / Explain		
8	Viewing Angle	178:178	Yes / No / Explain		
9	HDMI port	1 or more	Yes / No / Explain		

5. PTZ camera

Item specifications for PTZ camera

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Camera Sensor	1/2.8" to 1/2.5" CMOS	Yes / No / Explain		
2	Resolution	1080p at 60 fps or better	Yes / No / Explain		
3	Optical Zoom	30 x or better	Yes / No / Explain		
4	Horizontal angle of view / FOV	60 degrees or better	Yes / No / Explain		
5	Horizontal rotation range	270 degrees	Yes / No / Explain		
6	Vertical rotation range	+90° to -30°	Yes / No / Explain		
7	Image flip supported	Yes	Yes / No / Explain		
8	Backlight compensation	Supported	Yes / No / Explain		

9	White balance	Yes	Yes / No / Explain		
10	Digital noise reduction	Yes	Yes / No / Explain		
11	Preset Positions	50 Nos better	Yes / No / Explain		
12	Remote control	Yes	Yes / No / Explain		
13	No. of HDMI ports	1 or more	Yes / No / Explain		
14	No. of SDI ports	1 or more	Yes / No / Explain		
15	No. of RJ-45 ports	1 or more	Yes / No / Explain		
16	PoE supported	Yes	Yes / No / Explain		
17	Necessary DC power adapter and mounting kit included	Yes	Yes / No / Explain		

6. Fixing Camera Mounting Frame- camera mounting kit ceiling/wall mount type

Item specifications for Fixing Camera Mounting Frame

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	A suitable height adjustable Ceiling / wall mount MS with powder coated stand shall be provided for the PTZ camera. (For the above Item no:5, Ceiling mounting kit - 2 Nos , Wall mounting kit -3 Nos)	Yes	Yes / No / Explain		

7. PODIUM

Item specifications for PODIUM

SI No	Specification	Value	Compliance	Offered Specification	Remark
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1	Aluminium finish powder coated podium with height adjustable upto 50 cm , four caster wheels & lock to arrest the podium movement. Refer dimension drawing-4	Yes	Yes / No / Explain		
2	Provision & supply of 21 to 23 Inch Multi Touch Monitor with tilt facility upto 45 deg as per user height with control switch (Motorised Tilt).	Yes	Yes / No / Explain		
3	Provision to view laptop output in multi touch monitor and video wall simultaneously	Yes	Yes / No / Explain		
4	Ports available– 2nos XLR on the podium to connect mics, 2 nos HDMI, 2 nos USB, 4 nos RJ-45, 3.5mmjack & Power sockets – 5 nos for laptop, monitor etc.,	Yes	Yes / No / Explain		
5	Batteryless stylus Pen for touch monitor	Yes	Yes / No / Explain		
6	Small foldable tray on one side to keep Laptop while using touch monitor.	Yes	Yes / No / Explain		
7	Provision for 2Nos of 24inch Gooseneck mic with ON/Off Button	Yes	Yes / No / Explain		
8	AC 220V, 50Hz power operation	Yes	Yes / No / Explain		

8. Laptop

Item specifications for Laptop

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Processor		-		

2	No. of cores per processor	4 or more	Yes / No / Explain		
3	Processor base frequency	1.6 GHz or better	Yes / No / Explain		
4	Operating system	Windows 11 Professional	Yes / No / Explain		
5	Microsoft office version 2021 or higher with perpetual license	Yes	Yes / No / Explain		
6	Cache memory	18 MB or better	Yes / No / Explain		
7	Memory		-		
8	Type of RAM	DDR4 or better	Yes / No / Explain		
9	RAM size	16 GB or more	Yes / No / Explain		
10	No. of DIMM slots available	2 or more	Yes / No / Explain		
11	No. of DIMM slots populated	1 number	Yes / No / Explain		
12	Storage		-		
13	Type of drives used to populate internal bays	SSD	Yes / No / Explain		
14	Total SSD capacity	1024 GB or more	Yes / No / Explain		
15	Connectivity		-		
16	Type of wireless connectivity	Wi-Fi 6 : 802.11 ax or better	Yes / No / Explain		
17	Type of Ethernet port	1 no -10/100/1000 on board integrated Gigabit Port	Yes / No / Explain		
18	Bluetooth version	5.2 or better	Yes / No / Explain		
19	Ports		-		
20	No. of USB 3.0 ports	2 or more	Yes / No / Explain		
21	No. of HDMI ports	1 or more	Yes / No / Explain		

22	Display		-		
23	Display size	14 inches or more	Yes / No / Explain		
24	Display technology	LED backlit	Yes / No / Explain		
25	Display resolution	1920 x 1080 or better	Yes / No / Explain		
26	Resolution of webcam	HD or better	Yes / No / Explain		
27	Miscellaneous		-		
28	Internal speaker (Dual)	Yes	Yes / No / Explain		
29	Headphone out	Yes	Yes / No / Explain		
30	Keyboard type	Standard	Yes / No / Explain		
31	Backlit keyboard	Yes	Yes / No / Explain		
32	Type of carry case	Back pack	Yes / No / Explain		
33	Power		-		
34	Battery type	Integrated	Yes / No / Explain		

9. Goose neck Mics- For Lectern /Podium - 24 inches goose neck microphone

Item specifications for Goose neck Mics- For Lectern /Podium

Sl No	Specification	Value	Compliance	Offered Specification	Remark
1	Type	Condenser	Yes / No / Explain		
2	Frequency response	100Hz to 15KHz or better	Yes / No / Explain		
3	Pickup pattern	Cardioid	Yes / No / Explain		
4	Sensitivity	15 mV / Pa or better	Yes / No / Explain		

5	LED indicator	Yes	Yes / No / Explain		
6	Microphone modes	Toggle on/off	Yes / No / Explain		
7	Length	24 inches	Yes / No / Explain		

10. Gooseneck microphone with base - 15 inches goose neck microphone

Item specifications for Gooseneck microphone with base

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Type	Condenser	Yes / No / Explain		
2	Frequency response	100Hz to 15KHz or better	Yes / No / Explain		
3	Pickup pattern	Cardioid	Yes / No / Explain		
4	Sensitivity	15 mV / Pa or better	Yes / No / Explain		
5	LED indicator	Yes	Yes / No / Explain		
6	Microphone modes	Toggle on/off	Yes / No / Explain		
7	Length	15 inches	Yes / No / Explain		
8	Robust programable Mic button for (PTT, PTM, toggle On/off, permanent on), Bi-color status indication	Yes	Yes / No / Explain		

11. Wireless Handheld microphone

Item specifications for Wireless Handheld microphone

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Type	Digital Wireless system	Yes / No / Explain		
2	Pickup pattern	unidirectional	Yes / No / Explain		

3	Form factor	Handheld	Yes / No / Explain		
4	Transducer type	Condenser	Yes / No / Explain		
5	Audio frequency response (Microphone)	100 Hz to 15 kHz or better	Yes / No / Explain		
6	Frequency range	UHF	Yes / No / Explain		
7	Channel / frequency selection	Yes	Yes / No / Explain		
8	No of compatible channels in a Group	12 nos or more.	Yes / No / Explain		
9	Power requirement	AA batteries (to be included)	Yes / No / Explain		
10	Working range	60 m or better	Yes / No / Explain		
11	LED indicator	Yes	Yes / No / Explain		
12	On/off switch	Yes	Yes / No / Explain		
13	Transmitter and receiver units	Both required	Yes / No / Explain		
14	BNC connector for antenna extension	2 nos	Yes / No / Explain		

12. Wireless Microphone - Head worn

Item specifications for Wireless Microphone

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Type	Digital Wireless system	Yes / No / Explain		
2	Pickup pattern	Unidirectional	Yes / No / Explain		
3	Form factor	Headworn	Yes / No / Explain		
4	Transducer type	Condenser	Yes / No / Explain		
5	Frequency response (Microphone)	80 Hz to 15 kHz or better	Yes / No / Explain		

6	Frequency range	UHF	Yes / No / Explain		
7	Channel / frequency selection	Yes	Yes / No / Explain		
8	No of compatible channels in a Group	12 nos or more	Yes / No / Explain		
9	Power requirement	AA batteries (to be included)	Yes / No / Explain		
10	Operating range	60m or better	Yes / No / Explain		
11	LED indicator	Yes	Yes / No / Explain		
12	On/off switch	Yes	Yes / No / Explain		
13	Transmitter and receiver units	Both required	Yes / No / Explain		
14	BNC connector for antenna extension	2 nos	Yes / No / Explain		

13. Wireless Microphone - Collar mic

Item specifications for Wireless Microphone

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Type	Digital Wireless system	Yes / No / Explain		
2	Pick-up pattern	omnidirectional	Yes / No / Explain		
3	Form factor	Collar worn	Yes / No / Explain		
4	Transducer Type	Condenser	Yes / No / Explain		
5	Frequency response (Microphone)	80-15 KHz or better	Yes / No / Explain		
6	Frequency range	UHF	Yes / No / Explain		
7	No of compatible channels in a Group	12 nos or more	Yes / No / Explain		
8	Channel / frequency selection	Yes	Yes / No / Explain		

9	Power requirement	AA batteries(to be included)	Yes / No / Explain		
10	Operating Range	60 meter or better (Line of sight)	Yes / No / Explain		
11	LED Indicator	Yes	Yes / No / Explain		
12	On/off Switch	Yes	Yes / No / Explain		
13	Transmitter and receiver units	Both required	Yes / No / Explain		
14	BNC connector for antenna extension	2 nos	Yes / No / Explain		

14. ANTENNA

Item specifications for ANTENNA

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Active Directional Antenna	Yes	Yes / No / Explain		
2	Mounting type	Ceiling or wall mount	Yes / No / Explain		
3	Gain Adjustment for compensating coaxial cable signal loss	Yes	Yes / No / Explain		
4	Impedance	50 Ω	Yes / No / Explain		
5	Connector type	BNC	Yes / No / Explain		
6	Antenna should be compatible with the microphone receiver units specified in item no: 11 &12 &13 and antenna Distribution system specified item no: 16	Yes	Yes / No / Explain		

15. CABLE - Antenna cable min 50 mts length

Item specifications for CABLE

SI No	Specification	Value	Compliance	Offered Specification	Remark
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1	Cable Impedance	50 Ω	Yes / No / Explain		
2	End Connection	BNC connectors on both ends	Yes / No / Explain		
3	Length	50mtrs, or as per the site conditions	Yes / No / Explain		

16. ANTENNA SYSTEMS - Antenna distribution system

Item specifications for ANTENNA SYSTEMS

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Antenna Distribution support for upto 8 receivers or more	Yes	Yes / No / Explain		
2	Two 50 ohm, BNC cascade ports for system expandability	Yes	Yes / No / Explain		
3	RF signal amplification supported	Yes	Yes / No / Explain		
4	Impedance	50 Ω	Yes / No / Explain		
5	Form Factor	Rack Mount & Connection through BNC	Yes / No / Explain		
6	Compatibility with the microphone receiver units specified in item no: 11 &12 &13 and antenna specified in item no:14	Yes	Yes / No / Explain		

17. SPEAKERS- Control room Monitoring speakers

Item specifications for SPEAKERS

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Mounting Type	Wall mount	-		
2	Powered Speaker (Built in amplifier)	Yes	-		
3	LF Transducer size	6 inches or more	-		

4	HF Transducer size	1 inches or more	-		
5	Maximum SPL	100 dB or better	-		
6	Frequency Range	100 Hz - 20 kHz or better	-		
7	Amplifier Power rating	100 Watts or better	-		

18. AUDIO MIXERS - Analog audio mixer

Item specifications for AUDIO MIXERS

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Mixer Type	Analog	Yes / No / Explain		
2	Number of mono channel XLR inputs	16 Nos. or more	Yes / No / Explain		
3	Number of mono channel line inputs	16 Nos. or more	Yes / No / Explain		
4	Number of stereo input channels	2 or more	Yes / No / Explain		
5	Main L&R output with Fader control	Yes	Yes / No / Explain		
6	No. of Aux outputs	4 or more	Yes / No / Explain		
7	Gain control for mic inputs	Yes	Yes / No / Explain		
8	Frequency response	80Hz - 15kHz or better	Yes / No / Explain		
9	High pass filter for mic inputs	Yes	Yes / No / Explain		
10	3 Band EQ Support	Yes	Yes / No / Explain		
11	Built in effects processing like Delay, Reverb etc.	Yes	Yes / No / Explain		
12	Phantom power (48V) for mic inputs	Yes	Yes / No / Explain		
13	USB Audio in/out support	Yes	Yes / No / Explain		

14	Mute switch with LED indicator	Yes	Yes / No / Explain		
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19. Audio Digital Signal Processor

Item specifications for Audio Digital Signal Processor

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Analog Inputs	12 Mic/Line level inputs with individual AEC processing on Phoenix / Combicon removable screw connector and selectable 48V Phantom power.	Yes / No / Explain		
2	Analog Outputs	8 Mic/Line level outputs on Phoenix / Combicon removable screw connector.	Yes / No / Explain		
3	Noise cancellation	Yes	Yes / No / Explain		
4	Frequency Response	100 Hz to 15 K Hz or better	Yes / No / Explain		
5	RS-232 serial port	Yes	Yes / No / Explain		
6	RJ45 ethernet port	Yes	Yes / No / Explain		
7	Network audio port (AVB/Dante/BLUlink or equivalent)	Yes	Yes / No / Explain		
8	USB audio support	Yes	Yes / No / Explain		
9	Both DSP Units of the Same OEM may be Cascaded to Support 24 mic / line inputs and 16 mic / line level outputs.	Yes	Yes / No / Explain		
10	Configuration/ program file to be made available to LPSC	Yes	Yes / No / Explain		
11	Rack mount	Yes	Yes / No / Explain		

20. AV Over IP Encoder

Item specifications for AV Over IP Encoder

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Input	1 x HDMI or more	Yes / No / Explain		
2	output	1 x RJ45 Female 1Gig support or more	Yes / No / Explain		
3	Video Resolution supported	3840 x 2160 @ 60Hz over 1 Gbit network or better	Yes / No / Explain		
4	Video compression	JPEG 2000 or equivalent Codec with Latency less than 25 ms	Yes / No / Explain		
5	Analog stereo audio input	1 x HDMI, 1 x Mini Stereo Jack or more	Yes / No / Explain		
6	USB Port to support HID	Yes	Yes / No / Explain		
7	IR.	Yes	Yes / No / Explain		
8	RS-232	Yes	Yes / No / Explain		
9	POE support	Yes	Yes / No / Explain		
10	Necessary power Adapter included	Yes	Yes / No / Explain		

21. AV Over IP Decoder

Item specifications for AV Over IP Decoder

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Input	1x RJ45 or more	Yes / No / Explain		
2	Output	1x HDMI or more	Yes / No / Explain		
3	Video Resolution supported	3840 x 2160 @ 60Hz over 1 Gbit network or better	Yes / No / Explain		
4	Video compression	JPEG 2000 or equivalent Codec with Latency less than 25 ms	Yes / No / Explain		

5	Analog stereo audio output	1 x HDMI, 1 x Mini Stereo Jack or more	Yes / No / Explain		
6	USB Port to support HID	Yes	Yes / No / Explain		
7	IR.	Yes	Yes / No / Explain		
8	RS-232	Yes	Yes / No / Explain		
9	POE support	Yes	Yes / No / Explain		
10	Necessary power Adapter included	Yes	Yes / No / Explain		

22. AV Over IP Controller Appliance and software solution

Item specifications for AV Over IP Controller Appliance and software solution

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Configuration, management & control of end points	Yes	Yes / No / Explain		
2	Maximum devices supported	50 nos or more	Yes / No / Explain		
3	No of RJ45 ports	1 no. or more (If hardware solution used)	Yes / No / Explain		
4	Compatible AV over IP controller appliance or software solution or both for configuration management, installation, operation and control of end points specified in above sl no 20&21 to be supplied .The offered solution shall support 50 endpoint devices from day1 after installation.	Yes	Yes / No / Explain		

23. Tablets, Netbook, iPADS - portable touch panel with room controller

Item specifications for Tablets, Netbook, iPADS

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Touch panel		-		
2	Display Size	10 inches or better	Yes / No / Explain		
3	Display Resolution	1920 x 1080 or better	Yes / No / Explain		
4	Wifi 5 (IEEE 802.11ac) standard compliance	To be Supported	Yes / No / Explain		
5	Bluetooth 4.2 or better	To be Supported	Yes / No / Explain		
6	Table stand with holder and necessary power adapter for charging	To be included	Yes / No / Explain		
7	Room controller		-		
8	Supply of Compatible Room controller to control the entire AV system	Yes	Yes / No / Explain		
9	Programming of the AV control system and creation of a user friendly fully customizable graphical user interface for room control operations as per the LPSC requirement	Yes	Yes / No / Explain		
10	Provision to control the camera devices, Audio system, Display devices, Encoders, Decoders and other AV equipments using the AV controlled touch panel GUI as per the LPSC requirement. Sufficient control ports as per the requirement to be included.	Yes	Yes / No / Explain		

11	Any other equipment / devices / converters / cables / connectors / Adapters and other accessories required for the entire AV control system should be supplied and integrated with system as per LPSC requirement	Yes	Yes / No / Explain		
12	Controller program source code/configuration file should be made available to LPSC	Yes	Yes / No / Explain		
13	RJ-45 port	yes	Yes / No / Explain		

24. Network switch- 48port layer 2 managed AV Over IP, PoE Network Switch

Item specifications for Network switch

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Total number of Network ports(PoE+& SFP+)	48 ports or more	Yes / No / Explain		
2	PoE Ports / Budget	40 PoE+ (30W/port),900W Budget or better	Yes / No / Explain		
3	No of SFP ports	4 nos. or more	Yes / No / Explain		
4	IGMP Support	Yes	Yes / No / Explain		
5	Jumbo Frame Support	Yes	Yes / No / Explain		
6	Managed switch with non-blocking switching fabric	Yes	Yes / No / Explain		
7	Web based GUI	Yes	Yes / No / Explain		
8	VLAN support	Yes	Yes / No / Explain		
9	LAG & Trunk feature	Yes	Yes / No / Explain		
10	Rack mounting bracket & other accessories required for installation	Yes	Yes / No / Explain		

25. WIRELESS ACCESS POINT

Item specifications for WIRELESS ACCESS POINT

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	2.4GHz & 5 GHz Dual band Wifi support	Yes	Yes / No / Explain		
2	IEEE 802.11ac standard compliance	Yes	Yes / No / Explain		
3	MU-MIMO supported	Yes	Yes / No / Explain		
4	RJ-45 port	1 no. or more	Yes / No / Explain		
5	Necessary power adapter included	Yes	Yes / No / Explain		

26. Streaming encoder / recorder- 4 input streaming and recording encoder

Item specifications for Streaming encoder / recorder

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Video input (HDMI)	4 nos. or more	Yes / No / Explain		
2	Video input (SDI)	1 no. or more	Yes / No / Explain		
3	Audio input (XLR)	2 nos or more	Yes / No / Explain		
4	Video output (HDMI)	1 no. or more	Yes / No / Explain		
5	RJ-45 port	1 no. or more	Yes / No / Explain		
6	SSD interface	SATA (6 Gbps) or better	Yes / No / Explain		
7	Recording file format	MP4	Yes / No / Explain		
8	Input resolution	1080p @60 Hz or better	Yes / No / Explain		
9	Network feature	RTSP, RTMP,RTMPS,http	Yes / No / Explain		

10	2.5 inch SSD (1 TB) with enclosure	2 nos	Yes / No / Explain		
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27. HDMI to USB CONVERTER

Item specifications for HDMI to USB CONVERTER

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Input	1x HDMI	Yes / No / Explain		
2	Output	1x USB 3.0	Yes / No / Explain		
3	HDMI Loop Output	1 no. or more	Yes / No / Explain		
4	Supported Input Video Formats	1920 x 1080p @60 or better	Yes / No / Explain		
5	Supported Output Video Formats	1920 x 1080p @60 or better	Yes / No / Explain		
6	Audio Input	HDMI Embedded Audio&3.5mm stereo in	Yes / No / Explain		

28. Wireless Presentation System

Item specifications for Wireless Presentation System

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Basic function of device	Device should enable transmission of presentation video received through Wi-Fi from client device, to its HDMI display output.	Yes / No / Explain		
2	Maximum number of simultaneous sources on screen	2 or more	Yes / No / Explain		
3	Resolution supported	4K @30 Hz or more	Yes / No / Explain		
4	Wireless standards	802.11 b/g/n	Yes / No / Explain		
5	Wireless frequency (GHz)	Both 2.4 & 5	Yes / No / Explain		

6	No. of HDMI output ports	1 or more	Yes / No / Explain		
7	No. of HDMI Input ports	1 or more	Yes / No / Explain		
8	No. of USB ports	2 or more	Yes / No / Explain		
9	No. of RJ45 ports	1 or more	Yes / No / Explain		
10	3.5 mm audio input port	1 or more	Yes / No / Explain		
11	3.5 mm stereo audio output port	1 or more	Yes / No / Explain		

29. Joystick - camera controller with joystick

Item specifications for Joystick

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Control of 5 Nos. or more PTZ cameras specified in item No:5	Yes	Yes / No / Explain		
2	Pan & Tilt & Zoom control	Yes	Yes / No / Explain		
3	Joystick	Yes	Yes / No / Explain		
4	Camera Preset supported	Yes	Yes / No / Explain		
5	Joystick controller shall be the same brand of PTZ camera	Yes	Yes / No / Explain		

30. Rack

Item specifications for Rack

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Type of Rack	Portable Rack	Yes / No / Explain		
2	Usable height	36 U	Yes / No / Explain		

3	Usable width	19 inches	Yes / No / Explain		
4	Overall Width	600 mm	Yes / No / Explain		
5	Overall Depth	600 to 800 mm	Yes / No / Explain		
6	Mount Type	Free-Standing	Yes / No / Explain		
7	Front glass Door	Yes	Yes / No / Explain		
8	Removable Side Panels	Yes	Yes / No / Explain		
9	Heavy Duty Caster Wheels	4 nos. (minimum 2 nos. with brake)	Yes / No / Explain		
10	Secure Locks	Yes	Yes / No / Explain		
11	Support cable entry from top or bottom	Yes	Yes / No / Explain		
12	No. of Fan for Heat dissipation	1 or more	Yes / No / Explain		
13	No. of Rack trays	2 or more	Yes / No / Explain		
14	6 Outlet Power strip with 6A universal socket	3 nos. or more	Yes / No / Explain		
15	Mounting screws and all other accessories required for installation	Yes	Yes / No / Explain		

31. CABLES - audio, video, control cables, connectors and accessories at actuals

Item specifications for CABLES

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Supply of required audio, video, control cables & Connectors at actuals	Yes	Yes / No / Explain		

32. ADDITIONAL ITEMS - If any

Item specifications for ADDITIONAL ITEMS

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Additional hardware required	If any	Yes / No / Explain		

33. Installation and Commissioning

Item specifications for Installation and Commissioning

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Installation, testing, commissioning, training & documentation, programming, demonstration of above system with required PVC conduit, speaker wiring termination	Yes	Yes / No / Explain		

34. Resident Engineer - operational support during 3 year warranty period- 1st year

Item specifications for Resident Engineer

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	operational support during 3 year warranty	Yes	Yes / No / Explain		

35. Resident Engineer - operational support during 3 year warranty period -2nd year

Item specifications for Resident Engineer

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	operational support during 3 year warranty	Yes	Yes / No / Explain		

36. Resident Engineer - operational support during 3 year warranty period -3rd year

Item specifications for Resident Engineer

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	operational support during 3 year warranty	Yes	Yes / No / Explain		

37. Comprehensive AMC for 3 years- after warranty period - 1st year

Item specifications for Comprehensive AMC for 3 years

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	comprehensive SMC after 3 years warranty period	Yes	Yes / No / Explain		

38. Comprehensive AMC for 3 years- after warranty period - 2nd year

Item specifications for Comprehensive AMC for 3 years

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	comprehensive SMC after 3 years warranty period	Yes	Yes / No / Explain		

39. Comprehensive AMC for 3 years- after warranty period - 3rd year

Item specifications for Comprehensive AMC for 3 years

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	comprehensive SMC after 3 years warranty period	Yes	Yes / No / Explain		

40. Resident Engineer- operational support after 3 year warranty period i.e 4th year

Item specifications for Resident Engineer

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	operational support after 3 year warranty period	Yes	Yes / No / Explain		

41. Resident Engineer- operational support after 3 year warranty period i.e 5th year

Item specifications for Resident Engineer

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	operational support after 3 year warranty period	Yes	Yes / No / Explain		

42. Resident Engineer- operational support after 3 year warranty period i.e 6th year

Item specifications for Resident Engineer

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	operational support after 3 year warranty period	Yes	Yes / No / Explain		

Common Specifications (Applicable for all items)

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	warranty	3years	Yes / No / Explain		
2	Comprehensive SMC	3years beyond warranty	Yes / No / Explain		
3	operational support	3years during warranty period and 3 years during CSMC period (6 years)	Yes / No / Explain		

Supporting Documents required from Vendor

1. data sheets and catalogs from OEM highlighting the quoted specification

2. terms and conditions

3. certificate from OEM

4. scope of work

5. Compliance of specification as provided in the indent

5 additional documents can be uploaded by the vendor

C.2 Commercial Terms / Bid

Sl. No.	Description	Compliance	Vendor Terms
1	Onsite supply - After supply to be installed at LPSC Bengaluru	Yes / No / Explain	
2	Goods and Services Tax (GST): Kindly mention percentage of GST considered in your offer along with HSN Code.	Yes / No / Explain	
3	Delivery Terms: FOR LPSC, Bangalore or any other	Yes / No / Explain	
4	Delivery Period: The supply shall be completed within 60 days from the date of receipt of PO.	Yes / No / Explain	
5	Payment Terms: 100% payment shall be made within 30 days of receipt and acceptance of the items at our site.	Yes / No / Explain	
6	Liquidated Damages (LD): If the ordered items are not supplied within the delivery schedule, LD shall be levied from your bill @ 0.5% of the order value per week or 0.5% of the value of the stores for which the delivery is delayed for each week of delay subject to a maximum of 5% of the order value. However, in case of inordinate delay in completion period, LD@10% shall be recovered.	Yes / No / Explain	
7	Warranty: Warranty for a period of three years shall be provided from OEM (As per Annexure - 1, Section - 2, Clause No. 2.1)	Yes / No / Explain	
8	Performance Bank Guarantee (PBG): You have to submit PBG towards fulfilment of warranty obligations and performance of the system for 3% of the Order Value from a Nationalized / Scheduled Bank on non-judicial stamp paper of appropriate value valid till the completion of warranty period plus 60 days as per the format provided by Department. (OR) 3% of the Order Value shall be withheld till the completion of Warranty period plus 60 days.	Yes / No / Explain	

9	<p>Security Deposit (SD): You have to furnish a Bank Guarantee from a Nationalized / Scheduled Bank on non-judicial stamp paper of appropriate value for 3% of the order value within 10 days of receipt of order towards the faithful execution of the order valid till the completion of the scope of work as per order plus sixty days (as claim period).</p> <p>SD shall only be applicable for order value above INR 5.00 Lakhs. SD shall be returned to you immediately on execution of the order satisfactorily as per order terms. In case of non-performance / poor performance, the amount shall be withheld.</p>	Yes / No / Explain	
10	<p>SD cum PBG: In case, if parties are unable to provide two separate BGs, i.e. one for SD and one for PBG, they can submit a combined BG for SD & PBG within 10 days of receipt of order for 3% of order value valid till the completion of total contractual obligation (i.e. supply period plus warranty period plus 60 days) as per the format provided by the Department.</p>	Yes / No / Explain	
11	<p>Installation: Installation as per Annexure - 1, Section - 1, Clause No. 1.2</p>	Yes / No / Explain	
12	<p>Insurance: Being a Government of India Department, Insurance is not required at our cost. Please ensure the safe delivery of the ordered item with proper AIR / SEA / ROAD worthy packing.</p>	Yes / No / Explain	
13	<p>Details of Principal: Address, contact details like Telephone Number, e-mail, etc. (if applicable)</p>	Yes / No / Explain	
14	<p>Bank Details: Bank name, Branch address, Account No., IFSC Code, IBAN Number, SWIFT, etc.</p>	Yes / No / Explain	
15	<p>Local Content (%): Please mention the percentage of Local Content and the location where local value addition takes place (Kindly enclose self-certification document)</p>	Yes / No / Explain	
16	<p>Validity of offer: 120 days (for Two Part Tender) from the date of opening of tender or as specified in the Tender Document.</p>	Yes / No / Explain	

17	Comprehensive AMC: Comprehensive AMC for the entire system for a period of 3 years after the completion of the warranty period as per Annexure - 2, Clause No. 4 is mandatory for evaluation of bids.	Yes / No / Explain	
18	Preventive Maintenance: Once in three months	Yes / No / Explain	
19	Break down maintenance: Breakdown calls shall be attended within 8 hours & resolve within 24 hours.	Yes / No / Explain	
20	Payment terms for AMC: Maintenance charges shall be paid after every quarter proportionately on completion of each satisfactory service against submission of Invoice and duly certified service report.	Yes / No / Explain	
21	Security Deposit for AMC: The party shall submit the security deposit equivalent to 3% of the AMC value till the completion of contract in the form of bank guarantee or either form of negotiable instrument valid for the total AMC period, issued by a nationalized or scheduled bank in the form of Rs. 200 non-judicial stamp paper before commencement of the work in favor of Senior Accounts Officer, LPSC, Bangalore. This security deposit will be returned (interest free) after the successful completion of Annual Maintenance Contract. The security deposit shall have a further claim period of 6 months.	Yes / No / Explain	
22	Maintenance shall be carried out at our premises only. In case any item has to be taken to your premises for repairs, necessary Bank Guarantee for the value of the item shall be furnished, and valid till returning of the item.	Yes / No / Explain	
23	During AMC, in the event of damages to our property or injury to our personnel due to the negligence of your employees, the responsibility shall solely rests with you.	Yes / No / Explain	

24	Fall Clause: The rate charged for the work / supply shall in no event exceed the lowest rates for the similar work / supply to any other party during the period of the contract. If at any time during stipulated time period, reduction on the charges for similar work / supply to other customer extended by you, shall forthwith notify to the Purchase and Stores Division, rate payable under the contract after the rate, coming into force of such reduction shall stand correspondingly reduced & refunded to us	Yes / No / Explain	
25	Down-time Compensation: In case the break-down are not attended to in time, i.e., within 8 hrs. of our intimation, down-time compensation at the rate of 0.5% of the Annual Maintenance charges per day shall be recovered from you subject to a maximum of 5% of the Contract value.	Yes / No / Explain	
26	Resident Operational Support: Party shall provide Resident Operational Support for a period of 3 plus 3 years as per Annexure - 2, Clause No. 7	Yes / No / Explain	
27	Payment terms for Resident Operational Support: Payment for Resident Operational Support shall be made on quarterly basis against submission of invoice and submission of duly certified monthly operational service reports	Yes / No / Explain	

C.3 Price Bid

Sl. No.	Item	Quantity	Unit Price	Currency	Total Price	Remark
1	LED WALL - 1.88mm Pixel pitch indoor active LED video wall with mounting structure and controller	1.00 Nos.		-		
2	LED wall Processor - Video wall Processor	1.00 Nos.		-		
3	LED TV 55 INCH(55 INCH LED TV)	2.00 Nos.		-		

4	LED Monitor - 27 INCHES	2.00 Nos.		-		
5	PTZ camera	5.00 Nos.		-		
6	Fixing Camera Mounting Frame-camera mounting kit ceiling/wall mount type	5.00 Nos.		-		
7	PODIUM	1.00 Nos.		-		
8	Laptop	1.00 Nos.		-		
9	Goose neck Mics- For Lectern /Podium - 24 inches goose neck microphone	2.00 Nos.		-		
10	Gooseneck microphone with base - 15 inches goose neck microphone	3.00 Nos.		-		
11	Wireless Handheld microphone	4.00 Nos.		-		
12	Wireless Microphone - Head worn	2.00 Nos.		-		
13	Wireless Microphone - Collar mic	2.00 Nos.		-		
14	ANTENNA	2.00 Nos.		-		
15	CABLE - Antenna cable min 50 mts length	2.00 Nos.		-		
16	ANTENNA SYSTEMS - Antenna distribution system	1.00 Sets		-		
17	SPEAKERS- Control room Monitoring speakers	1.00 Pair		-		

18	AUDIO MIXERS - Analog audio mixer	1.00 Nos.		-		
19	Audio Digital Signal Processor	2.00 Nos.		-		
20	AV Over IP Encoder	20.00 Nos.		-		
21	AV Over IP Decoder	13.00 Nos.		-		
22	AV Over IP Controller Appliance and software solution	1.00 Nos.		-		
23	Tablets, Netbook, iPADS - portable touch panel with room controller	1.00 Sets		-		
24	Network switch- 48port layer 2 managed AV Over IP, PoE Network Switch	2.00 Nos.		-		
25	WIRELESS ACCESS POINT	1.00 Nos.		-		
26	Streaming encoder / recorder- 4 input streaming and recording encoder	1.00 Nos.		-		
27	HDMI to USB CONVERTER	2.00 Nos.		-		
28	Wireless Presentation System	1.00 Nos.		-		
29	Joystick - camera controller with joystick	1.00 Nos.		-		
30	Rack	2.00 Nos.		-		

31	CABLES - audio, video, control cables, connectors and accessories at actuals	1.00 Lot		-		
32	ADDITIONAL ITEMS - If any	1.00 Lot		-		
33	Installation and Commissioning	1.00 Lot		-		
34	Resident Engineer - operational support during 3 year warranty period- 1st year	1.00 Years		-		
35	Resident Engineer - operational support during 3 year warranty period -2nd year	1.00 Years		-		
36	Resident Engineer - operational support during 3 year warranty period -3rd year	1.00 Years		-		
37	Comprehensive AMC for 3 years- after warranty period - 1st year	1.00 Years		-		
38	Comprehensive AMC for 3 years- after warranty period - 2nd year	1.00 Years		-		
39	Comprehensive AMC for 3 years- after warranty period - 3rd year	1.00 Years		-		

40	Resident Engineer-operational support after 3 year warranty period i.e 4th year	1.00 Years		-		
41	Resident Engineer-operational support after 3 year warranty period i.e 5th year	1.00 Years		-		
42	Resident Engineer-operational support after 3 year warranty period i.e 6th year	1.00 Years		-		

Common charges (Applicable for all items)

P & F Charges	
Freight if any (Value)	
Installation & Configuration	
Other Costs, if any (Value)	
Taxes, if any (Percentage)	