

**NATIONAL GALLERY OF MODERN ART
(Ministry of Culture, Govt. of India)
Jaipur House, India Gate
New Delhi - 110003**

**NOTICE INVITING E-TENDER
FOR**

**UPGRADATION AND MODERNISATION OF
AUDIO VIDEO EQUIPMENTS
IN AUDITORIUM AND PREVIEW THEATRE**

**AT
NATIONAL GALLERY OF MODEN ART (NGMA) JAIPUR
HOUSE, NEW DELHI**

**File No C(S) - 9 (IT)/2020-21/NGMA
National Gallery of modern Art**

**25th February 2021
TENDER NOTICE- Inviting Quotations**

Subject: Engagement of System Integrator for “Upgradation and Modernization of Audio Video Equipment in Auditorium and Preview Theatre” at National Gallery of Modern Art, Jaipur House, New Delhi.

Section -1 Background of the project:

The National Gallery of Modern Art, New Delhi, is a repository of more than 17000 most significant works of modern and contemporary art in the country. The principal aims of NGMA are to acquire and preserve modern art from 1850 onwards and to present it to a global audience which will create an understanding and sensitivity towards a time that helped shape the contemporary art in India. The institution is also committed to promote contemporary Indian art in its various forms.

The principal aims and objectives of the National Gallery of Modern Art:

- To acquire and preserve works of modern art from 1850s onward
- To organize, maintain and develop galleries for permanent display
- To organize special exhibitions not only in its own premises but in other parts of the country and abroad.
- To develop an education and documentation centre in order to acquire, maintain and preserve documents relating to works of modern art
- To develop a specialized library of books, periodicals, photographs and other audio visual materials
- To organize lectures, seminars and conferences, and to encourage higher studies and research in the field of art history, art criticism, art appreciation, museology and the inter-relations on visual and performing arts.

The foremost responsibility of the National Gallery of Modern Art is to ensure quality and to set and maintain standards of excellence. The aesthetic and educational purposes are not only defined in the aims and objectives of the National Gallery of Modern Art, but efforts are also being made so that they become implicit in its organization and pervade all its activities.

Section -2 Objective:

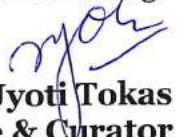
In order to engage esteemed audiences with finer experiences of the significance and development of Modern and Contemporary art of India, NGMA intends to go for Upgradation and Modernization of Audio Visual Equipment in Auditorium and Preview Theatre. NGMA intends to engage reputed and experienced System Integrator agency for the same.

Section -3 Scope of Work

Overall scope of work includes:-

- Supply, Installation of bill of materials
- Commissioning and Testing of the installed devices

Interested parties are requested to submit quotations in sealed envelope as per annexure 1 within seven days of publication of this Notice to the following:



Dr. Jyoti Tokas
Head of Office & Curator
National Gallery of Modern art
New Delhi

TERMS AND CONDITION

01. Bidders Eligibility Criteria:

- a) Bidder should have experience of supplying such items and will have to furnish details of previous supplies.
- b) The supply, installation, testing and commissioning of products/items is expected to be from a reliable and reputed make for trouble free operation.
- c) The Original Equipment Manufacturer (OEM/s) of Sound Reinforcement System, Large Format Display and Laser Projection System – offered products/items shall be based with its own fully functional Service Centre in India (Authorized / 3rd Party Service Centre is not allowed) and registered as a company under Indian Companies Act (Registration certificate required). OEM should have dedicated Toll Free Customer Care no. for any service / post warranty related issues
- d) If the bidder is not the OEM, the bidder should be authorized by the OEM(s) for Sound Reinforcement System, Large Format Display and Laser Projection System specifically for this bid. A letter in this regard should be issued by the competent authority from the OEM's India Office.
- e) The materials shall be latest and shall not meet end of life. OEM(s) of Sound Reinforcement System, Large Format Display and Laser Projection System shall ensure after-sales-support including availability of spare parts during three years warranty period and three-years thereafter while issuing authorization letter(s) for this bid.
- f) All materials and accessories of this project should be installed by the bidder on site.
- g) OEM must provide escalation matrix and toll free telephone numbers for service support.
- h) The bidder may have site inspection and bid offer will be assumed to include all costs taken in to account of the site requirement.
- i) The bidder shall quote AMC (Comprehensive AMC) including manpower and spare parts except consumables of the materials to facilitate on-site timely support for next three years after completion of warranty period. The cost of AMC will not be included for calculation of L1.
- j) Bidder shall provide all relevant records required i.e. Income Tax Return Certificate/PAN, Financial Tax Clearance/V.A.T. Certificate And other taxes (whichever applied)

- k) The bidder should be in the business of similar work of fabrication work for the last five years and should have in house infrastructure for the work.
- l) The bidder should have registered an office and/or authorized branch/office in Delhi-NCR area.
- m) The bidder should provide documentary proof for the above in the form of a work order / supply order / contract document / testimonial.
- n) Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:
 - i. Made misleading or false representation in the forms, statements and attachments submitted in proof of the qualification requirements; and/or
 - ii. Record for poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc.
- f) The bidder should have PAN/TAN/GST/TIN registration in their name.
- g) The bidder should have executed a single order of at least Rs.25 lakhs in the last three years.
- h) The average annual turnover of the bidder should be at least Rs. 20 lakhs in the last three years.
- i) It should not have been blacklisted by any Government organization.

02. Delivery Place:

Bidder will supply and deliver the materials in requisite number at the office of "National Gallery of Modern Art, Delhi"

03. Submission of Quotations/Bid:

1. Establishment Registration Certificate
 2. Current Return of Income Tax.
 3. Bid Security Declaration Form (Annexure 'B')
 4. Details of Work Experience.
- a) The Financial part (Part – II) of the bid shall consist of only Rate/Price in Proforma supplied with the IFQ on the company's / Firm's letter

pad. All the column and requisite information must be filled in the prescribed format. Bidder must quote the item wise.

- b) Award of contract on the basis of lowest evaluated price for which the bidder must quote the rate per item. Bidder must quote the rate of all items.

04. Performance Security:

1. 3% of total bid/contract value will have to be deposited as performance security in form of Bank Guarantee/ Demand Draft in favor of DDO, National Gallery of Modern Art, Delhi. By the lowest evaluated responsive bidder before the award of work. The performance security will be refunded only after the expiry of the contract as specified in the bid document/agreement.
2. The performance security deposit shall be forfeited in case of any terms and conditions of the contract/agreement etc. infringed or the bidder fails to complete the supply in time.

05. Validity Quotation:

Quotation shall remain valid for a period not less than 90 days after the deadline date specified for submission.

06. Evaluation of Quotation:

The purchaser will evaluate and compare quotations determined to be substantially responsive i.e.

1. Are properly signed
2. Confirm of terms, conditions, specifications and qualifications conditions.

07. Award of Contract:

1. The purchaser will award the contract to the bidder whose quotations has been determined to be substantially responsive, and who has offered the lowest evaluated quoted price.
2. Notwithstanding the above, the purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of the contract.
3. The bidder whose bid is accepted will be notified of the award of contract by the purchaser. The terms of the accepted offer shall be incorporated in the supply order. The validity period May be extended by the purchaser by another 2 day in exceptional cases.

08. Other Terms and Conditions:

1. The Equipment as indicated in the tender notice and the technical specification forming part of this tender documents are required to be installed at the Planetarium building in National Gallery of Modern Arts, Delhi, India. The tenderer or their representative can visit the site in National Gallery of Modern Arts, Delhi, India, and get complete information about the site and conditions at their own cost.
2. INSTALLATION: The tenderer is responsible for supply, installation / commissioning / demonstration, training wherever applicable and for after sales service during the warranty and thereafter during the period of AMC.
3. Installation, Commissioning Charges, to be inclusive in bid.
4. Installation and demonstration to be arranged by the supplier and the same is to be done within 15 days after handing over of the site or 1 months of placing order, whichever is earlier.
5. Rates must be quoted on CIF, Delhi basis and for transportation, delivery at NGMA, Delhi after customs clearance (if applicable) (India) by Vendor. The loading/unloading, transportation, insurance during transit and unloading at NGMA site etc are to be borne by the vendor.
6. The NGMA reserves the right to prepone /postponed/cancel the bid, the bidder will have to abide with the decision.
7. If the supplier fails to supply, install and commission the system as per specifications mentioned in the order within the due date, the supplier is liable to pay liquidity damages of one percent value of the Purchase Order awarded, per week delay subject to a maximum of 10% for every week beyond the due date and such money will be deducted from any money due or which may become due to the supplier. The NGMA will also have right to claim and recover the liquidity damages by any and all means available.
8. Payment shall be made after the supply and submission of bills which will be subject to satisfactory supply (certified by the committee constituted for the purpose). Personnel In charge will certify the quality and quantity of the items supplied/work done as per specifications and recommend accordingly the extent of payment.
9. Authorized representative of NGMA shall have all powers to inspect any portion of the equipment, the workmanship at any stage of execution of work even at the factory site of the manufacturer and the Bidder has to facilitate this whenever NGMA arises such an inspection.
10. Quotation may be submitted on the printed letter head of the bidder in the prescribed format supplied with IFQ.

11. No payment will be made for any damage of goods supplied.
12. Liquidated damages provisions for damages shall be included of the contract when delays in delivery of goods, completion of work or failure of the goods or work to meet performance requirements would result in extra cost, or loss of revenue or loss of other benefits to the implementing agency.
13. The successful bidder will be bound with an agreement terms specified by NGMA. Sealed quotations received till then will be opened in the office 03.03.2021.

We look forward to receiving your quotations and thank you for your interest in this project.

09. Technical Bid

1. Technical Bid should contain the complete specifications and technical details required for evaluation of the tenderer and the equipment or elements of technical solution offered. Following details should invariably form part of the technical bid.
2. Manufacturer's name, address, relevant Literature / Brochures of equipment, shows, warranty terms, List of installations and performance reports
 - a) Terms and Conditions of Sale and Installation of equipment, if any.
 - b) Authority letter/dealership certificate in case the bidder is not the manufacturer.
 - c) Tender document signed and sealed on all pages.
 - d) The Country of Origin, Country of Shipment and currency in which rates are quoted are to be mentioned.
3. Details of requirement of support and services that will be required from NATIONAL GALLERY OF MODERN ARTS, DELHI for installation and further running of the machines as well as after-sales services offered should be clearly mentioned in the tender.
4. The supplier has to carry out the required maintenance works during the AMC period, (post warranty period) as per the contract and if the supplier does not execute the work, the NATIONAL GALLERY OF MODERN ARTS, DELHI reserves the right to black list the bidder.
5. Technical drawings, manuals all in English etc should be complete in all respects to operate the system without any problem

6. The Tenderer has to take care of detail the Electrical Power/UPS requirements, floor Space, head room, other structural details, load bearing support and site preparation and also to state whether Air-conditioned environment is needed to house the system and to run the tests and the details of Air condition system to be provided i.e. pre-installation facilities required for installation may please be intimated in the technical bid.
7. All drawing/mapping of the building where the Dome projector to be installed are has to be done by the tenderer. Tenderer may visit, the site at NATIONAL GALLERY OF MODERN ARTS, DELHI, the building therein, where the installations are to be carried out before submitting their tender if required at their own cost.
8. The details like address, telephone number and name of the contact person of reputed Organizations in India and or abroad where the tenderer/manufacturer has supplied the similar equipment need to be attached.
9. It is the duty of the supplier to supply the equipment suitable for the existing building without any structural modification other than those mutually agreed upon and possible and ensure that the equipment supplied is functioning effectively and efficiently as per the specification.
10. The tenderer should have a strong support and back up team in Delhi for attending to breakdowns and maintenance at short notice.
11. After successful installation, the supplier has to ensure a minimum down time of equipment/instrument in case of breakdown. If the identified firm or person fails to put the system into working condition NATIONAL GALLERY OF MODERN ARTS, DELHI will have rights to claim damages from the supplier. If the contractor fails to guarantee an uptime above 90% or fails to put back the equipment within 3 days of break down, the warranty period/ AMC period will be extended by the number of days in break down condition.
12. In case of parameters like resolution and contrast ratio, the specifications declared in the published catalogue of the OEM shall be considered. However, the supplier has to undertake that the specifications of the system components are correct and that in case of incorrect specifications, if found at a later stage, they will replace the system with new system having the correct specifications as asked in the tender.

13. The Unique pixels on the dome will be calculated based on the number of projectors offered, to cover the dome, their individual resolution, void area, Edge Blending and other standard losses, if any

10. Financial Bid

- a) The Cost of each component should be mentioned clearly in the Financial Bid only in the given offer form. The supplier has to stock the required essential spares for trouble free running of the system for a period of two years free of cost along with the consignment.
- b) The equipment should have a life span of not less than 5 years.
- c) AMC rates and prices of spare parts will also be taken into account for Financial evaluation of the tender.

11. ARBITRATION

In the case of any dispute or difference between the parties of the contract, entered into, either during or after the completion of the work or after termination, abandonment or breach of contract or as to the interpretation of the provisions of the contract or as to any matter of thing arising there under except as to any matter left to the discretion of National Gallery of Modern Arts, Delhi under the clauses of contract, such dispute or difference shall be referred to the Civil Courts of Delhi and the jurisdiction of such matters will be confined to the competent Courts and forum in Delhi State only.

12. SPECIFICATIONS

Supply, Installation, testing and commissioning of Upgradation and Modernisation of Audio Video Equipment in Auditorium and Preview Theatre by reputed Indian vendors with the following specifications at National Gallery of Modern Arts, Delhi in the existing premises

The Degrees/Tilt/Area of inner specifications to be measured by vendor with provision of all supporting structures. The vendor has to supply all structural details of the Auditorium and Preview Theatre for fitting the same in the existing area and the same has to be got approved by the DG, NGMA. The elements required for fitting the structure are to be supplied by the vendor.

Audio Video Equipment in Auditorium and Preview Theatre

- a) Preference will be given for more resolution ie. higher no. of pixels.
- b) The required hardware and software to interface these projectors to the console both manually and using computers are to be provided.
- c) The digital projectors and other requirements used need to be of reputed make. Projection technology should be DLP/LCOS/ Laser technology.
- d) The brand name, model, resolution, standard, brightness, technology (LCOS or DLP), Lamp life etc. should be mentioned in the offer and manuals with all technical data of projectors should be supplied.
- e) The projectors should be capable of operating in economy mode (60-100 %).
- f) The projectors need to be of latest technology incorporated so that 3D shows and large format shows with immersive experience can be projected on the Dome.
- g) The system should be capable of providing at least 24 mega pixels with 10% tolerance (net) on the dome after edge blending and overlapping. Interpolated resolution is also acceptable.

Schedule of Requirements

S/No.	Nomenclature	Unit	Qty.
	Sound Reinforcement System		
01	600 W Two-way Speaker with 1 x 15 inch LF & Rotatable Horn	Nos.	04
02	350 W Two-way Line Array Speaker	Nos.	02
03	250 W Two-way Speaker with 1 x 8 inch LF	Nos.	06
04	1350 W Subwoofer with 2 x 15 inch LF	Nos.	02
05	500 W Subwoofer with 2 x 10 inch LF	Nos.	02
06	Powered Speaker with 1 x 12 inch LF	Nos.	02
07	Powered 5 inch Two-way Studio Monitor	Nos.	02
08	1200 W per Channel at 4 Ohms Four-channel Power Amplifier	Nos.	02
09	1200 W per Channel at 4 Ohms Two-channel Power Amplifier	No.	01
10	2100 W per Channel at 4 Ohms Two-channel Power Amplifier	No.	01
11	2000 W at 4 Ohms Bridged Two-channel Power Amplifier	No.	01
12	22-Channel Analog Mixer	No.	01
13	12-Channel Analog Mixer	No.	01
14	Advanced Feedback Suppression	No.	01
15	12 x 8 Digital Signal Processor	No.	01
16	4 x 4 Digital Signal Processor	No.	01
17	Programmable Touch Panel with knob	Nos.	02
18	PoE Injector	Nos.	02
19	Active DI Box for Analog Audio Connectivity	Nos.	04
20	Wireless Handheld Microphone System	Nos.	03
21	Wireless Lavalier Microphone System	Nos.	03
22	Wired Dynamic Vocal Microphone	Nos.	07
23	Wired Dynamic Instrument Microphone	Nos.	07
24	Wired Gooseneck Microphone	No.	01
25	Antenna Power Splitter up to 4 Receivers	Nos.	07
26	Passive Directional Wide-band UHF Antenna	Nos.	02
	Video Projection System		
27	3-LCD Laser Projection System	No.	01
28	Projection Lens	No.	01
29	Cyclorama Screen	No.	01
	Large Format Display		
30	98 inch Ultra HD Large Display	No.	01
	Audio Video Processor		
31	Wireless Presentation Device	Nos.	02
32	Video over Ethernet Receiver and Transmitter	Nos.	04
33	DVD Player	Nos.	02
	Cables & Connectors		

34	12 AWG Speaker Cable	Meters	150
35	18 AWG Speaker Cable	Meters	140
36	Microphone Cable	Meters	150
37	4-core Snake Cable	Meters	100
38	Power Cable	Meters	300
39	HDMI Cable (15 meters)	No.	01
40	HDMI Cable (2 meters)	Nos.	04
41	Antenna Cable for Wireless Systems (10 meters)	Nos.	02
42	Speakon Connector	Nos.	24
43	XLR Connector	Nos.	68
44	XLR Wall Plate (8 ports)	Nos.	03
45	PoE Switch	Nos.	02
Power Back-up			
46	10 KVA On-line UPS	No.	01
47	6 KVA On-line UPS	No.	01
48	MCB 63 Amp (4 Pole)	Nos.	02
Equipment Rack & Misc. Items			
49	22U AV Equipment Rack	No.	01
50	18U AV Equipment Rack	No.	01
51	12U Rack	Nos.	02
52	Microphone Stand	Nos.	15
53	On-stage Notation Stand	Nos.	03

Technical Specifications

(A) Sound Reinforcement System

01. 600 W Two-way Speaker with 1 x 15 inch LF & Rotatable Horn

Ser. No.	Specifications	
(a)	System Type	Two-way, Full-range
(b)	Frequency Response (+/-3 dB)	40 Hz to 20 KHz or better
(c)	Driver	LF – 1 x 15 inch or better and HF – 1.5 inch or better
(d)	Coverage Pattern	90 x 50 degree, rotatable waveguide to use the speaker in either the vertical or horizontal orientation
(e)	Crossover Modes	Bi-amp / Passive switchable
(f)	Sensitivity	95 dB SPL on Passive mode (max. SPL - 130 dB peak) or better
(g)	Power (IEC)	600 W and 2400 W peak at Passive mode or better
(h)	Nominal Impedance	8 ohms
(i)	Passive Crossover	1.2 KHz or better

	Frequency	
(j)	Physical Features	Birch plywood enclosure and powder coated grille and Speakon and barrier strip terminal inputs

02. 350 W Two-way Line Array Speaker

Ser. No.	Specifications	
(a)	System Type	Two-way Line-array Column
(b)	Frequency Response (-10 dB)	60 Hz to 20 KHz or better
(c)	Driver	LF – 4 x 5 inch or better and HF – 16 x 1 inch or better
(d)	Coverage Pattern	25 (V) x 150 (H) degree
(e)	Sensitivity	90 dB SPL (max. SPL - 125 dB peak) or better
(f)	Power	350 W and 1400 W peak or better
(g)	Nominal Impedance	8 ohms
(h)	Physical Features	ABS cabinet and aluminium grille enclosure

03. 250 W Two-way Speaker with 1 x 8 inch LF

Ser. No.	Specifications	
(a)	System Type	Two-way, Full-range
(b)	Frequency Response (+/-3 dB)	60 Hz to 18 KHz or better
(c)	Driver	LF – 1 x 8 inch or better and HF – 1 inch or better
(d)	Coverage Pattern	120 (H) x 60 (V) degree or better
(e)	Sensitivity	90 dB SPL (max. SPL - 115 dB) or better
(f)	Power	250 W and 1000 W peak or better
(g)	Nominal Impedance	8 ohms
(h)	Crossover Frequency	1.6 KHz or better
(i)	Physical Features	hardwood plywood enclosure and powder coated perforated steel grille and Speakon and barrier strip terminal inputs

04. 1350 W Subwoofer with 2 x 15 inch LF

Ser. No.	Specifications	
(a)	Frequency Response (+/-3 dB)	40 Hz to 1 KHz or better

(b)	Power Rating	1350 W (5400 W peak) or better
(c)	Sensitivity	100 dB SPL (max. SPL - 135 dB peak) or better
(d)	Nominal Impedance	4 ohms in parallel-drive mode and should support 2 x 8 ohms in discrete-drive mode
(e)	Driver	LF - 2 x 15 inch or better
(f)	Physical Features	Birch plywood enclosure and powder coated perforated steel grille and Speakon and barrier strip terminal inputs

05. 500 W Subwoofer with 2 x 10 inch LF

Ser. No.	Specifications	
(a)	Frequency Range (-10 dB)	40 Hz to 500 Hz or better
(b)	Power Rating	400 W (1600 W peak) or better
(c)	Sensitivity	95 dB SPL (max. SPL - 120 dB) or better
(d)	Nominal Impedance	8 ohms
(e)	Driver	LF - 2 x 10 inch or better
(f)	Physical Features	High Impact PolyStyrene (HIPS) enclosure and thermoset composite-coated grille

06. Powered Speaker with 1 x 12 inch LF

Ser. No.	Specifications	
(a)	System Type	Two-way, Self-powered
(b)	Frequency Response (+/-3 dB)	60 Hz to 20 KHz or better
(c)	Driver	LF – 1 x 12 inch or better and HF – 1.5 inch or better
(d)	Maximum SPL Output	135 dB peak or better
(e)	Coverage Pattern	90 x 50 degree nominal
(f)	Crossover Frequency	1.85 KHz
(g)	Amplifier	Class D for 1500 W power or better
(h)	EQ	User selectable pre-sets for main or monitor position and advanced EQ settings available using App via Wi-Fi
(i)	Inputs	2x Balanced XLR and 2 x unbalanced RCA input
(i)	Physical Features	Birch wooden enclosure and powder coated grille
(k)	AC Power Input	100V - 240V (50/60 Hz)

07. Powered 5 inch Two-way Studio Monitor

Ser. No.	Specifications	
(a)	System Type	Two-way, Self-powered
(b)	Frequency Range (+/-3 dB)	50 Hz to 20 KHz or better
(c)	Driver	LF – 1 x 5 inch or better and HF – 1 inch or better
(d)	Sensitivity	94 dB SPL (max. SPL - 108 dB) or better
(e)	Input Connectors	1 x XLR and 1 x TRS balanced
(f)	Amplifier Power Rating	Class D for 41 W RMS (LF and HF)
(g)	AC Power Input	100V - 240V (50/60 Hz)

08. 1200 W per Channel at 4 Ohms Four-channel Power Amplifier

Ser. No.	Specifications	
(a)	Channels	Min. 4 nos.
(b)	Power Output per Channel	1200 watts at 4 ohms, 8 ohms and high impedance
(c)	Sensitivity	0.7V RMS for full rated power at 8 ohms
(d)	THD (at full rated power, 20Hz - 20kHz)	0.35%
(e)	Voltage Gain	34 dB (Max Level)
(f)	Damping Factor (20 Hz to 100 Hz)	>1000 or better
(g)	Cooling	Continuously variable speed forced air
(h)	DSP	Should have on-board DSP features like limiters, input/output EQ, delay etc.
(i)	Features	2 x digital audio bus RJ-45 port and 1 x Ethernet RJ-45 port for monitoring and configuration
(i)	Power Supply	100V - 240V (50/60 Hz)

09. 1200 W per Channel at 4 Ohms Two-channel Power Amplifier

Ser. No.	Specifications	
(a)	Channels	Min. 2 nos.
(b)	Power Output	1200 watts at 4 ohms per Channel
(c)	Sensitivity	1.4V for full rated power at 4 ohms
(d)	Signal to Noise Ratio	100 dB
(e)	Total Harmonic Distortion	0.5% or less
(f)	Damping Factor (20 Hz to 1 KHz)	500 or better
(g)	Crosstalk (20 Hz to 1 KHz)	70 dB or better (for below rated power)

(h)	Input Impedance	20 KOhms (balanced) and 10KOhms (unbalanced)
(i)	Frequency Response at 1 W for 20 Hz to 20 KHz	+0 dB, -1 dB

10. 2100 W per Channel at 4 Ohms Two-channel Power Amplifier

Ser. No.	Specifications	
(a)	Channels	Min. 2 nos.
(b)	Power Output	2100 watts at 4 ohms per Channel
(c)	Sensitivity	1.4V for full rated power at 4 ohms
(d)	Signal to Noise Ratio	103 dB
(e)	Total Harmonic Distortion	0.5% or less
(f)	Frequency Response at 1 W for 20 Hz to 20 KHz	+0 dB, -1 dB
(g)	Damping Factor (20 Hz to 1 KHz)	500 or better
(h)	Crosstalk (20 Hz to 1 KHz)	70 dB or better (for below rated power)
(i)	Input Impedance	20 KOhms (balanced) and 10KOhms (unbalanced)

11. 2000 W at 4 Ohms Bridged Power Amplifier

Ser. No.	Specifications	
(a)	Channels	Min. 2 nos.
(b)	Power Output	2000 watts at 4 ohms bridged
(c)	Sensitivity	1.4V for full rated power at 4 ohms
(d)	Signal to Noise Ratio	100 dB
(e)	Total Harmonic Distortion	0.5% or less
(f)	Frequency Response at 1 W for 20 Hz to 20 KHz	+0 dB, -1 dB
(g)	Damping Factor (20 Hz to 1 KHz)	500 or better
(h)	Crosstalk (20 Hz to 1 KHz)	70 dB or better (for below rated power)
(i)	Input Impedance	20 KOhms (balanced) and 10KOhms (unbalanced)

12. 22-Channel Analog Mixer

Ser. No.	Specifications	
(a)	Channel	22 nos. or better
(b)	USB Interface	2-in/2-out or better
(c)	Auxes	5 nos. or better
(d)	EQ	4-band or better
(e)	Effects	Dual engine

(f)	Sub-groups	4 mono / 2 stereo
(g)	Faders	100 mm or better

13. 12-Channel Analog Mixer

Ser. No.	Specifications	
(a)	Channel	12 nos. or better
(b)	USB Interface	2-in/2-out or better
(c)	Auxes	3 nos. or better
(d)	EQ	3-band or better
(e)	Effects	Single engine
(f)	Sub-groups	2 mono / 1 stereo
(g)	Faders	60 mm or better

14. Advanced Feedback Suppression

Ser. No.	Specifications	
(a)	Inputs and Outputs	2 inputs and 2 outputs
(b)	Max Input Line Level	+20 dBu
(c)	A/D Conversion	24-bit
(d)	THD+Noise	0.003%
(e)	Frequency Response	20Hz – 20kHz, +/- 0.5dB
(f)	Crosstalk input to output	>80 dB
(g)	Input Impedance	Balanced 50k Ω , Unbalanced 25k Ω
(h)	Filter Metering	24 LED per Channel
(i)	Features	24 Programmable Filters per Channel
		Should have wizard setup function and full LCD display

15. 12 x 8 Digital Signal Processor

Ser. No.	Specifications	
(a)	Inputs and Outputs	DSP with 12 inputs and 8 outputs 12 Control Inputs and 6 Logic Outputs for GPIO Integration
(b)	Architecture	Open architecture software configurable
(c)	Inputs Gain	Nominal gain 0dB, electronically switchable up to +48dB (in +6dB steps)
(d)	Digital Audio Bus	2 nos.
(e)	Phantom Power	48V on all analog inputs
(f)	THD	<0.01% 20Hz to 20KHz, +10dBu output
(g)	Crosstalk	<-75dB
(h)	Signal Processing	400 MHz

(i)	Control Port	1xEthernet port for monitoring and configuration
(j)	Features	Should have monitoring LED for COM, STAT, ERR and PWR

16. 4 x 4 Digital Signal Processor

Ser. No.	Specifications	
(a)	Inputs and Outputs	DSP with 4 inputs and 4 outputs 12 Control Inputs and 6 Logic Outputs for GPIO Integration
(b)	Architecture	Open architecture software configurable
(c)	Inputs Gain	Nominal gain 0dB, electronically switchable up to +48dB (in +6dB steps)
(d)	Digital Audio Bus	2 nos.
(e)	Phantom Power	48V on all analog inputs
(f)	THD	<0.01% 20Hz to 20KHz, +10dBu output
(g)	Crosstalk	<-75dB
(h)	Signal Processing	400 MHz
(i)	Control Port	1xEthernet port for monitoring and configuration
(j)	Features	Should have monitoring LED for COM, STAT, ERR and PWR

17. Programmable Touch Panel with knob

Ser. No.	Specifications	
(a)	Type	Should be supplied with DSP and by the same DSP OEM
(b)	Capability	Capable to control any DSP parameter and capable to create 'folders' for nested pages; Should have password protection
(c)	Power	48V DC or PoE powering
(d)	Display	Touch-Screen
(e)	Control In	1xRJ45 Ethernet connector to connect with DSP
(f)	Controls	Two buttons; rotary encoder and touch screen

18. PoE Injector

Ser. No.	Specifications	
(a)	Features	To send power and data on demand to

		any PoE-powered device via a single category cable
--	--	--

19. Active DI Box for Analog Audio Connectivity

Ser. No.	Specifications	
(a)	Input	1/4" jack unbalanced instrument / line / speaker level
(b)	Output	1/4" Unbalanced XLR male balanced
(c)	Frequency Response	20Hz to 20kHz, +/-2.5dB

20. Wireless Handheld Microphone System

Ser. No.	Specifications	
(a)	System	Wireless microphone system with MHz carrier frequency band
(b)	Audio bandwidth	35 - 20,000 Hz
(c)	THD at 1 kHz	<0.3% (Receiver); 0.7 % (Transmitter)
(d)	Signal-to-Noise	120 dB(A) (Receiver)
(e)	Modulation	Wideband FM
(f)	RF output power	10 or 50 mW
(g)	Sensitivity	6.3 dB V / -100 dBm
(h)	Features	Up to 16 pre-programmed frequencies within the same frequency band; Up to 48 simultaneous channels; Up to 14 hours operation with one single AA battery or better; Pilot Tone transmission to know the transmitter battery status; Receiver should have microphone level and line level output; Transmitter should have display to show the battery and LED to show the muted /unmuted status; Should have Microprocessor-controlled diversity and Infrared programmable

21. Wireless Lavalier Microphone System

Ser. No.	Specifications	
(a)	System	Wireless microphone system with MHz carrier frequency band
(b)	Audio bandwidth	35 - 20,000 Hz
(c)	THD at 1 kHz	<0.3% (Receiver); 0.7 % (Transmitter)
(d)	Signal-to-Noise	120 dB(A) (Receiver)

(e)	Modulation	Wideband FM
(f)	RF output power	10 or 50 mW
(g)	Sensitivity	6.3 dB V / -100 dBm
(h)	Features	Up to 16 pre-programmed frequencies within the same frequency band; Up to 48 simultaneous channels; Up to 14 hours operation with one single AA battery or better; Pilot Tone transmission to know the transmitter battery status; Receiver should have microphone level and line level output; Transmitter should have display to show the battery and LED to show the muted /unmuted status; Should have Microprocessor-controlled diversity and Infrared programmable

22. Wired Dynamic Vocal Microphone

Ser. No.	Specifications	
(a)	Transducer	Dynamic
(b)	Pick-up Pattern	Super-cardioid
(c)	Frequency Response	70 Hz to 16 KHz
(d)	Sensitivity	2.6 mV/Pa
(e)	Electrical Impedance	600 Ohm
(f)	Recommended Load Impedance	2000 Ohms
(g)	Audio Output	Balanced XLR type; male and 3-pin
(h)	Body	Metal

23. Wired Dynamic Instrument Microphone

Ser. No.	Specifications	
(a)	Type	Dynamic pressure gradient microphone
(b)	Polar pattern	Cardioid
(c)	Audio Frequency Bandwidth	50 Hz to 20 KHz
(d)	Sensitivity ay 1 KHz	2.5 mV/Pa
(e)	Electrical impedance	≥ 600 Ohms
(f)	Audio Output	Balanced XLR type; male and 3-pin
(g)	Body	Metal

24. Wired Gooseneck Microphone

Ser.	Specifications
------	----------------

No.		
(a)	Type	Wired Gooseneck Microphone with Desktop base unit and on/off switch
(b)	Audio Frequency Bandwidth	70 Hz to 18 KHz
(c)	Signal to Noise	64 dB-A
(d)	Length	500 mm
(e)	Voltage	9 to 52 V Power Interface
(f)	Audio Output	Balanced XLR type; male and 3-pin

25. Antenna Power Splitter up to 4 Receivers

Ser. No.	Specifications	
(a)	Features	Antenna splitter operates in an extended frequency range - 470 to 952 MHz for maximum flexibility

26. Passive Directional Wide-band UHF Antenna

Ser. No.	Specifications	
(a)	Features	Active directional antenna compatible with supplied wireless microphones

(B) Video Projection System

27. 3-LCD Laser Projection System

Ser. No.	Specifications	
(a)	Display System	3-LCD System
(b)	Light Output	9,000 lumens or better
(c)	Resolution	1920x1200 pixels or better
(d)	Light Source	Laser diode
(e)	Contrast Ratio	Infinity:1
(f)	Lens Shift	Powered
(g)	Keystone Correction	Max. + / - 30 degrees
(h)	Auto Filter Cleaning / Auto Color Calibration	Yes
(j)	Inputs	5BNC; Mini D-sub 15-pin; DVI; HDMI; HDBaseT and USB (Type-A)
(k)	Control	RS232C and LAN
(l)	Acoustic Noise	39 dB
(m)	Power Requirements	AC 100 ~ 240V, 50~60Hz
(n)	Service Centre	OEM should have its own fully functional Service Centre in Delhi/NCR. Authorized/3 rd Party Service Centre is not allowed

(o)	Service / Post-warranty Support	OEM should have dedicated Toll Free Customer Care no. for any service/post warranty related issues
(p)	OEM Presence	OEM should be present in India for 10 years or more

28. Projection Lens

Ser. No.	Specifications
(a)	As per the requirement of the site

29. Cyclorama Screen

Ser. No.	Specifications
(a)	Providing and fixing cyclorama curtain cum screen in plastic perforated material on tubular frame made out of 35 mm diameter MS pipe Approx. size 16 x 10 (feet) with reputed make screen fabric etc. complete with installation as per the site requirement

(C) Large Display

30. 98 inch Ultra HD Large Display

Ser. No.	Specifications
(a)	Screen Size 98 inch
(b)	Panel Technology In-Plane Switching (IPS)
(c)	Native Resolution UHD (3840 x 2160 pixels)
(d)	Brightness 350 cd/m2 or better
(e)	Contrast Ratio 1300:1 or better
(f)	Response Time 8 ms (G to G)
(g)	Life Time 50,000 hours (Typical)
(h)	Operation Hours 24 Hours
(j)	Viewing Angle 178 degree (H) and 178 degree (V)
(k)	Orientation Landscape & Portrait
(l)	Inputs 3 x HDMI 1 x Display port 1 x DVI-D 2 x USB 2.0 1 x Audio
(m)	Outputs 1 x Display port 1 x Audio 1 x External speaker

(n)	Control	1 x RS-232 (In / out)
		1 x RJ-45 in
		1 x IR in
(o)	Supported Features	8 GB internal memory
		Built-in Wi-Fi
		PIP / PBP (4) and screen share
		Temperature sensor, auto brightness sensor, current sensor and USB auto playback
(p)	Power	Built-in Power, 100V to 240V AC, 50Hz / 60Hz
(q)	Certification	UL, IEC, FCC Class A/CE and Energy Star 7.0
(r)	Service Centre	OEM direct service centre in Delhi to provide on-site service (Registration certificate required)
(s)	OEM Office	OEM should have running office in India from last 03 years (Registration certificate required)

(D) Audio Video Processor

31. Wireless Presentation Device

Ser. No.	Specifications	
(a)	Platform	Any OS supporting HDMI standard 1.4
(b)	Video Output	HDMI 1.4, comply with HDCP
(c)	Output Resolution	1920x1080
(d)	Frame Rate	30 fps
(e)	Wireless	IEEE 802.11ac and 5 GHz
(f)	Data Rate Wireless	Up to 400 Mbps
(g)	Security (Encryption)	AES 128 bit

32. Video over Ethernet Receiver and Transmitter

Ser. No.	Specifications	
(a)	Video Input	1xHDMI
(b)	Video Output	1xHDMI
(c)	Max. Resolution / Distance	1080p / 60 meter over Cat 6

33. DVD Player

Ser. No.	Specifications	
(a)	Playback	DVD video; Audio CD
(b)	Color System	PAL
(c)	Output	HDMI

(E) Cables & Connectors

- 34. 12 AWG Speaker Cable
- 35. 18 AWG Speaker Cable
- 36. Microphone Cable
- 37. 4-core Snake Cable
- 38. Power Cable
- 39. HDMI Cable (15 meters)
- 40. HDMI Cable (2 meters)
- 41. Antenna Cable for Wireless Systems (10 meters)
- 42. Speakon Connector
- 43. XLR Connector
- 44. XLR Wall Plate (8 ports)
- 45. PoE Switch

Ser. No.	Specifications	
(a)	Number of Ports	8 x 10/100/1000BASE T and 2 x 100/1000 Mbps SFP ports
(b)	Switching Capacity	20 Gbps
(c)	Max. Forwarding Rate	14.44 Mbps
(d)	MAC Address Table Size	8K
(e)	PoE Standard	IEEE 802.3af and IEEE 802.3at
(f)	Power Budget	65 watts
(g)	Packet Buffer Memory	4.1 Mbits
(h)	CPU Memory	DDR3 128 MB
(i)	Power Input	100 to 240 V AC, 50/60 Hz

(F) Power Back-up

- 46. 10-KVA On-Line UPS

Ser. No.	Specifications	
(a)	Phase	Single Phase with Ground
(b)	Capacity (Max.)	10,000 VA / 8,000 Watts
(c)	Input / Output Voltage	220/230/240 VAC
(d)	Input Voltage Range	180 to 300 VAC (Based on load at 100%)

(e)	Input Power Factor	< or = 0.99 at nominal voltage (100% load)
(f)	Output Voltage Regulation	1% (Batt. Mode)
(g)	Output Current Crest Ratio	3:1
(h)	Waveform	Pure Sine Wave
(i)	No. of Battery Required	16 nos.
(j)	Battery Type	VRLA
(k)	Back-up Time	Approx. 01 hour

47. 6-KVA On-Line UPS

Ser. No.	Specifications	
(a)	Phase	Single Phase with Ground
(b)	Capacity (Max.)	6,000 VA / 4,800 Watts
(c)	Input / Output Voltage	220/230/240 VAC
(d)	Input Voltage Range	180 to 300 VAC (Based on load at 100%)
(e)	Input Power Factor	< or = 0.99 at nominal voltage (100% load)
(f)	Output Voltage Regulation	1% (Batt. Mode)
(g)	Output Current Crest Ratio	3:1
(h)	Waveform	Pure Sine Wave
(i)	No. of Battery Required	16 nos.
(j)	Battery Type	VRLA
(k)	Back-up Time	Approx. 01 hour

48. MCB 63 Amp (4 Pole)

(F) Equipment Rack & Misc. Items

49. 22U AV Equipment Rack

Ser. No.	Specifications	
(a)	Structure	22U CRCA steel
(b)	Front Door	Lockable toughened glass door
(c)	Finish	Powder coated
(d)	Accessories	Power distribution unit, cable manager and fan

50. 18U AV Equipment Rack

Ser. No.	Specifications	
(a)	Structure	18U CRCA steel
(b)	Front Door	Lockable toughened glass door
(c)	Finish	Powder coated
(d)	Accessories	Power distribution unit, cable manager and fan

51. 12U Rack

Ser. No.	Specifications	
(a)	Structure	12U CRCA steel
(b)	Front Door	Lockable toughened glass door
(c)	Finish	Powder coated

52. Microphone Stand

53. On-stage Notation Stand

Bid Security Declaration Form

To (insert complete name and address of the purchaser)

I/We. The undersigned, declare that:

I/We understand that, according to your conditions, bids must be supported by a Bid Securing Declaration.

I/We accept that I/We may be disqualified from bidding for any contract with you for a period of one year from the date of notification if I am /We are in a breach of any obligation under the bid conditions, because I/We

a) have withdrawn/modified/amended, impairs or derogates from the tender, my/our Bid during the period of bid validity specified in the form of Bid; or

b) having been notified of the acceptance of our Bid by the purchaser during the period of bid validity (i) fail or reuse to execute the contract, if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the Instructions to Bidders.

I/We understand this Bid Securing Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our Bid.

Signed: (insert signature of person whose name and capacity are shown) in the capacity of (insert legal capacity of person signing the Bid Securing Declaration)

Name: (insert complete name of person signing the Bid Securing Declaration)

Duly authorized to sign the bid for an on behalf of (insert complete name of Bidder)

Dated on _____ day of _____ (insert date of signing)

Corporate Seal (where appropriate)

CHECK LIST FOR BIDDERS/APPLICANTS

1. The Bidder should ensure that all documents and papers submitted in this BID are fully authenticated by the authorized signatory under his signature with official seal wherever applicable.
2. The following documents form should be submitted with BID:

Sl.No.	Documents to be submitted Documents submitted	Y/N	Documents Submitted
1.	All pages of this BID document should be duly signed by the authorized signatory as a token of acceptance of all terms and conditions by the bidder. Any other document submitted by the bidder should also be signed by the authorized signatory		
2.	Signatory indicating experience of supplying such items and working with Govt. Ministries/ Departments / PSUs, etc.		
3.	General Power of attorney in favor of the signatory signing the BID documents. It is not required in case of proprietary firm if the Proprietor himself signs the documents.		
4.	Attested copy of Article or Memorandum of Association or Partnership deed or proprietorship registration as the case may be.		
5.	The bidder should have registered an office and/or authorized branch/office in Delhi-NCR area.		
6.	The bidder should have executed a single order of at least Rs. 25 lakhs in the last three years.		
7.	The average annual turnover of the bidder should be at least Rs. 10-15 lakhs in the last three years.		
8.	Attested copy of VAT/CST/Service TAX Registration number, if applicable.		
9.	Attested Copy of PAN/Number.		
10.	Attested copy of return for last month/quarter as the case may be submitted towards Central and State Sales Tax/VAT if applicable.		

11.	Bank Account No. of the firm with IFS code & Bank Branch Name		
12.	Bid Security Declaration		

Signature of the Bidder