

NATIONAL COUNCIL OF SCIENCE MUSEUMS
SECTOR-V, BLOCK-GN, BIDHANNAGAR,
KOLKATA – 700 091.

TENDER No. I-18012/7/20(234)

Cost Break-up

A. CONTENT DETAILS							
Sl. No.	Description	Qty.	Unit	Basic Rate (To be entered by bidder)	GST % (To be entered by bidder) In Percentage	Total Amount Without GST (To be entered by bidder)	Total Amount With GST (To be entered by bidder)
01.	Script writing of 90 minutes for 3D projection Show in English and Hindi containing the theme as mentioned above	1	Lot				
02.	Detailed Research on the NGMA Art works and Artists involved to the overall understanding to write a relevant script is paramount to conceptualise creatively	1	Lot				
03.	Creative Direction: Designing and drafting of visual storyboard, storytelling, testing and finalization of script, animation, graphics, video-timeline with frames, voiceover and music.	1	Lot				
04.	Creative Production: Integration of all projections with 3d modelling if any. Integration of video content with the Building wall.	1	Lot				
05.	Shooting and recreation of scene : Any shooting or recreation shot required to create content for projection	1	Lot				
06.	Music composition and direction, Conceptualization and finalization of music design for VO, recordist for music or musician for flute, sitar, table, dholak, santoor, sarod etc, foley sounds. Background sound. Archival sound editing etc.	1	Lot				

07.	Narration to be done by professionals in dual languages (Hindi and English).	1	Lot				
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B. HARDWARE DETAILS							
I. Projectors, Lasers & Lights							
01.	Supply, Installation, Testing and Commissioning of RGB laser Projector 3-chip DLP, 4K (4096X2160) native solution, min. 25,000 ANSI lumens Contrast Ratio : minimum 5000 : 1 , 25000 hours, horizontal and vertical lens offset , Should have inbuilt blending and warping capabilities, Inputs: HDMI/DVI,DP ports Analog Controls: RS232 in/out, Ethernet (10/100), with lens as per site. (Make: Christie/Barco/NEC or equivalent approved by NCSM).	1 (for front facade)	No.				
02.	Supply, installation, testing and commissioning of 13,000 ANSI Lumens or more Laser phosphor Projector on DLP technology having Lux level above 100 lux, Contrast ratio 2,000,000:1, Resolution WUXGA (1920 x 1200), including digital zoom lens as per requirement of site (Make: Christie/Barco/Panasonic /Digital Projection/NEC or equivalent approved by NCSM).	3 (for front facade)	Nos.				
03.	Dust tight and protected against waterProjection housing enclosure to control with DEC Control Interface for setup and monitoring of temperature, humidity and status indicators. Power control circuit with PID Management system compatible with the projection housing unit and display unit. (Make : Customised)	3	Nos.				
04.	Supply, installation, testing and commissioning of 10,000 mW or more Laser, Graphics capable - 35 kpps@° ILDA, Max scan angle 50°, Full colour mixing - analog modulation, 5.5 mm beam diameter and low divergence of 1.3 mrad. Make LPS/KVANT/ Laserworld/Pangolin or equivalent approved by NCSM.	2 (for back facade)	Nos.				
05.	Dust tight and protected against waterLaser housing enclosure with DEC Control Interface for setup and monitoring of temperature, humidity and status indicatorLaser protection housing 20 - 30 °C with an accuracy of 0.3°C inside, independent from the ambient temperature in a temperature range of +5°C up to 45°C (Make : Customised)	2	Nos.				
06.	Control panel with Independent Digital Led Display for Monitoring of Temperature and Humidity, exhaust control circuit, heating circuit, and power distribution for the projectors and Lasers. (Make : Customised)	1	No.				

07.	Supply, installation, testing and Commissioning of Sharp beam moving heads; Input Voltage: AC 100-240V C 50/60 HZ; Power: 620 Watt, Lamp: 20R 4400Watt; Life:2000 hrs; DMX channels: 24ch; CMY colour mixing with gradually fading colour wheels: 15 colour + white CMY colour mixing system; PAN: 540° (16 bit); Tilt: 270° (16 bit); Gobo wheel: Fixed Gobos + Rotating Gobos; Effect wheel: rotating prism + frost + shake; Strobe: 0-13f/s random or pulse flash, speed adjustable strobe macro function; Dimmer: 0-100% linear lighting dimming; BIS, LM 79 and LM 80 approved; Ingress Protection type: IP20; (Make: Sholite/DTS/Clay Paky/SGM or equivalent approved by NCSM)	26 (20 for back facade and 6 for front facade)	Nos.				
08.	Supply, installation, testing and Commissioning of Gobo lights; Input Voltage: AC 100-240V C 50/60 HZ; Power: 620 Watt, Lamp: 20R 4400Watt; Life:2000 hrs; DMX channels: 24ch; CMY colour mixing with gradually fading colour wheels: 15 colour + white CMY colour mixing system; PAN: 540° (16 bit); Tilt: 270° (16 bit); Gobo wheel: Fixed Gobos + Rotating Gobos; Effect wheel: facet rotating prism + frost + shake; Strobe: 0-13f/s random or pulse flash, speed adjustable strobe macro function; Dimmer: 0-100% linear lighting dimming; BIS, LM 79 and LM 80 approved; Ingress Protection type: IP20; (Make: Sholite/DTS/Clay Paky/SGM or equivalent approved by NCSM)	2 (for trees)	Nos.				
09.	Supply, installation, testing and commissioning of DMX 512 controlled Waterproof Clear Vision Dome enclosures for Moving head/Gobo Light.	28	Nos.				
10.	SITC of RGB LED spotlight/uplighter; With Mounting Bracket, pivots in two axes; With LED operation life: > 50,000 hrs.; Colour temperature range: 2700K to 3000K; Input voltage Range: 160V to 260V; LED make: Philips / Osram / Nichia / Bridge lux / Citizen / Cree / Seoul / Samsung or equivalent approved by NCSM; Working Temperature: 0°C to 50°C; Beam Angle: 8° to 12° or Narrow beam; Good Thermal Management System with LM 79 approved; Connection via insulation displacement termination, With DMX Control Gear; Corrosion-resistant aluminum cast housing, High weather resistant/powder-coated, stove-enameled; Safety-glass pane, clear; Ingress Protection type: IP65; (Make: MSS/Sholite/DTS/Clay Paky/SGM or equivalent approved by NCSM)	8 (for back facade)	Nos.				
11.	Supply, installation, testing and Commissioning of RGBW LED Flood light;	15	Nos.				

	With Mounting Bracket, pivots in two axes; With LED operation life: > 50,000 hrs; Colour temperature range: 3000K to 6500K; Input voltage Range: 160V to 260V; LED make: Philips / Osram / Nichia / Bridgelux / Citizen / Cree / Seoul / Samsung or equivalent approved by NCSM; Working Temperature: 0°C to 50°C; Beam Angle: 10° to 15°/30°/45°/60° or Normal distribution beam; Power: 70W; RGBW; Colour Rendering Index (CRI): Ra>70; Good Thermal Management System with LM 79 approved; Connection via insulation displacement termination, With DMX Control Gear; Corrosion-resistant aluminum die cast housing, High weather resistant/powder-coated, stove-enameled; Safety-glass pane, clear; Ingress Protection type: IP65; (Make:MSS/Sholite/DTS/Clay Paky or equivalent approved by NCSM)	(for back facade)					
12.	Supply, installation, testing and Commissioning of RGBW LED Façade light; With Mounting Bracket, pivots in two axes; With LED operation life: > 50,000 hrs; Colour temperature range: 3000K to 6500K; Input voltage Range: 160V to 260V; LED make: Philips / Osram / Nichia / Bridgelux / Citizen / Cree / Seoul / Samsung or equivalent approved by NCSM; Working Temperature: 5°C to 50°C; Beam Angle: 40° to 60° or Wide beam; Power factor: >0.9; Working Humidity: 10% to 90% RH; Power: 120W; System power efficiency: >85%; Luminous Efficiency/ LED Efficiency: 4200-4500 lumens; Colour Rendering Index (CRI): Ra>70; Good Thermal Management System with LM 79 approved; Connection via insulation displacement termination, With DMX Control Gear; Corrosion-resistant aluminum die cast housing, High weather resistant/powder-coated, stove-enameled; Safety-glass pane, clear; Ingress Protection type: IP65; (Make: MSS/Sholite/DTS/Clay Paky/SGM or equivalent approved by NCSM)	15 (for back facade)	Nos.				
II. Sound & Music							
13.	Supply, installation, testing and commissioning of Audio/Dimmer Rack - 19 " - 36 U Rack, 600 mm wide, height approx 1800 mm with Aluminum frame and 800 mm depth, top bottom side panel and rear door of CRCA. Sheet size 1 mm, front door with Aluminum section and acrylic/glass sheets, make Netrack/APW President/MTS or equivalent approved by NCSM	2	Nos.				
14.	Supply, Installation, testing and commissioning of Three way full range loudspeaker system (indoor / outdoor). Speaker with 15" woofer, a 10" midrange with 4" voice coil and a 1.4" exit titanium compression driver. The	5	Nos.				

	<p>system to be driven in bi-amped mode, Max SPL 136 dB , 900 Watts AES (LF) + 400 Watt AES (MF/HF); Frequency Response (-10dB) : 50 Hz to 20kHz ;Frequency Response (-3dB) : 65 Hz to 20kHz; Sensitivity (DB, 1W @ 1M) : 109 dB, 1W @ 1m; Nominal Impedance (OHM): 8 ohm; Horizontal coverage angle: 60° , Vertical coverage angle: 40°.</p> <p>Protection Grade : IP 67</p> <p>Make : Bose/Tannoy/QSC/TW Audio / JBL/ RCF or equivalent approved by NCSM</p>						
15.	<p>Supply, Installation, testing and commissioning of a subwoofer with 18" woofer, 4.0" voice coil, and The system should be compact and provide high output. 136 dB Max SPL; System Power rating 900 Watt RMS; Frequency Response (-10DB): 30 Hz ÷ 200 Hz, Frequency Response (-3dB): 35 Hz ÷ 200 Hz, Nominal Impedance (OHM): 8 ohm; Sensitivity (DB, 1W @ 1M): 100 dB, 1W @ 1m.</p> <p>Protection Grade : IP 55</p> <p>Make : Bose/Harman/Tannoy/QSC/TW Audio/ RCF or equivalent approved by NCSM</p>	2	Nos.				
16.	<p>Supply, Installation, testing and commissioning of Studio Monitor speakers with high power and low distortion 75 W + 25W Two Class-D True Active low distortion amplifiers, Frequency Response : 50 Hz to 20 kHz ; Input sensitivity : -2 dBu; Max SPL @ 1M : 107dB ; Coverage angle 70 degree vertical, 110 degree horizontal ; Total Power : 200W Peak, 100W RMS.</p> <p>Make : Bose/Tannoy/QSC/TW Audio/Harman / RCF Ayra Pro 5 or equivalent approved by NCSM</p>	1	No.				
17.	<p>Supply, Installation, testing and commissioning of 4 channel power amplifier. Lightweight 2 rack units space of Frequency Response (-3DB): 20 Hz ÷ 25 kHz; Power Output Per Channel (@ 2 OHM): 2400W RMS; Power Output Per Channel (@ 8 OHM): 1300 W RMS Power Output (Bridged @ 8 OHM): 4400 W RMS ; Signal to noise ratio 110 dB; Front panel signal / clippings / protection/ temperature LEDs indicators for each channel. Make : Crown / Lab Gruppen /Bose/TW Audio / RCF or equivalent approved by NCSM</p>	4	Nos.				

18.	Supply, Installation, testing and commissioning of 12 inputs and 8 outputs, configurable signal processing and a high bandwidth, fault tolerant digital audio bus Processor with BLU Link, Signal Processing (MHz) : 400; This processor features a low latency, fault tolerant digital audio bus of 48 channels . Analog Inputs provide software configurable gain in 6dB steps up to +48dB per channel and software selectable Phantom Power per channel. Make : BIAMP/ KlarkTeknik /Bose/TW Audio/ BSS BLU 100 or equivalent approved by NCSM	1	No.				
19.	Audio Interface Hybrid FireWire and USB Audio Interface with software license. Eight 24-bit analog quarter-inch (TRS) inputs and Eight 24-bit analog quarter-inch (TRS) outputs, Operates on all analog I/O at standard sample rates up to 192 kHz, MIDI I/O,Auto-switching international power supply. (Make: Focusrite/Steinberg/Motu or equivalent approved by NCSM)	1	No.				
III. Control Systems							
20.	Supply, installation, testing and commissioning of Show Control software complete with necessary software and hardware interface including lifetime license and accessories. Make: Dataton/ Coolux (Christie)/D3 /Medialon/AV Stumpfl/Resolume/Watchout or equivalent approved by NCSM). Artnet boxes with adequate support equipment as required. (make: Enttec, Elation, SGM or equivalent approved by NCSM)	2	Nos.				
21.	Supply, installation, testing and commissioning of Laser and lighting Control software complete with necessary software and hardware interface, license as required, Make: Showcad/ Pangolin/ Avolite/ GrandMA/ Realizzer or equivalent approved by NCSM with lifetime license validity.	1	No.				
22.	Supply, installation, testing and commissioning of 4.3.3 Media server with Intel i7 Xeon Processor / AMD thread ripper or equivalent windows / AMD thread ripper or equivalent , Windows (With lifetime license) with 16GB RAM or more Nvidia GPU with minimum 4 outputs supporting 7680x4320@60Hz Full HD output on each display out 23/24 " Flat Panel LED Monitor with HDMI or equivalent display port Industrial grade components from high end brands complete with keyboard mouse etc. for Laser, Lighting, Main server and slave server, Make: Dataton/Asus/HP/Dell or equivalent approved by NCSM. Slave server should be deployed to prevent failure.	2	Nos.				

23.	Supply, installation, testing and commissioning of Hardware - HDMI Extender receiver and transmitter, Network switch, show control system, iPad/android tablet, WIFI router, FB4 boxes	1	Set				
24.	Supply, installation, testing and Commissioning of rack mounted DMX 512 Splitter with Input voltage range:190-280V; Input signal interface: XLR male and female sockets parallel; Output signal interface; XLR female socket parallel; Input Power range: 90V-240 VAC; Frequency range: 50HZ to 60HZ etc. (Make: MSS/Sholite/DTS/Clay Paky/SGM or equivalent approved by NCSM)	8	Nos.				
IV. Miscellaneous							
25.	Supply, installation, testing and commissioning of 40 KVA, on-line UPS with all safeties and protection and suitable capacity sealed maintenance free batteries, with 30 minutes. Backup time on full load with MS open MS Battery rack and Nyvin cable as required, Make: Liebert Emerson/Microtek/Eaton/APC or equivalent approved by NCSM.	1	No.				
26.	Supply, installation, testing and commissioning of DVI Extender Transmitter and Receiver, Make: Kramer/ Extron/ TV One or equivalent approved by NCSM.	3	Set				
27.	Supply, installation, testing and Commissioning of Rack Mountable 24 Port Gigabit switch, Make: D'Link/Cisco/Netgear/Trendnet or equivalent approved by NCSM.	1	No.				
28.	Supply and laying of all necessary power cable and connector of ISI approved reputed brand.	1	Lot				
29.	Supply and laying of all necessary signal/control cable and connector of ISI approved reputed brand.	1	Lot				
30.	Supply and laying of all necessary Audio cable and connector of ISI approved reputed brand.	1	Lot				
31.	Supply and fixing of all Electrical and Signal accessories including Earthing and Electrical panel	1	Lot				
32.	Supply and fixing of weatherproof projector housing and Central Command centre	1	Lot				
33.	Supply, Installation, Testing and commissioning of hot dipped galvanized mild steel step Poles (if required). Grey UV stabilized pure polyester powder coated GI pipe. Plasma cut and duly chamfered opening window for terminal	1	Lot				

	connection and mounting accessories. Fitting must be done with Allen screws to the pole.						
34.	Preparation of concrete foundation, installation, testing and commission and earthing for poles. RCC laying as per guidelines provided by Engineer-in charge from NGMA.	1	Lot				
35.	Control of an array (a relevant portion) of existing façade lights of NGMA (will be provided by NGMA/NCSM)	1	Lot				
36.	Supply, Installation, Testing and Commissioning of Feeder Pillars, LT wires, Casing and housing modules,	1	Lot				
37.	Chairs and seating arrangements for 100 nos of visitors	1	Lot				
C. ANNUAL MAINTENANCE CONTRACT (After completion of 1 year of defect liability period)							
01.	In addition of comprehensive maintenance during Defect Liability period of 1 Year, Operation of the show for the entire year (Compulsory)	1	Lot				
02.	First year of Operation of the show for the entire year & comprehensive maintenance of the entire facility (Compulsory) after the completion of 1 year of Defect Liability Period.	1	Lot				
03.	Second year of Operation of the show for the entire year and comprehensive maintenance of the entire facility (Compulsory)	1	Lot				
04.	Third year of Operation of the show for the entire year and comprehensive maintenance of the entire facility (Rate only : Will be executed separately by NGMA)	1	Lot				
05.	Fourth year of Operation of the show for the entire year and comprehensive maintenance of the entire facility (Rate only : Will be executed separately by NGMA)	1	Lot				
Total							
(To be entered by bidder)							

- Note:**
- 1) Bidders are required to quote for all the items mentioned above failing which their bid(s) will not be considered and rejected out rightly.
 - 2) The Total Amount in the BoQ and cost break up sheet (Annexure K) should tally with the total amount quoted in the BoQ of excel sheet.
 - 3) Bidders are requested to fill up this form and upload in the CPP Portal as a part of Cover II.