

TENDER

FOR

**Interior works for the Senate hall in the
Administrative block at Kerala University of
Health Sciences, Thrissur**

PART-III

PRICE BID

TENDER NO. HLL/ID/16/30

MARCH 2017



HLL Lifecare Limited
(A Government of India Enterprise)

एचएलएल लाइफ़केयर लिमिटेड
(भारत सरकार का उद्यम)

GOLDEN JUBILEE BLOCK

HLL BHAVAN, POOJAPPURA PO

THIRUVANANTHAPURAM – 695012

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1 COMMERCIAL CONDITIONS

1.0.1 The tendered rate shall inter alia be deemed to include for the provision of all materials, process, operation and special requirements detailed in the particular specification irrespective of whether these are mentioned in the description of equipment schedule and Bill of quantities or not. It is an express condition of the contract that the tendered rates for various items in the Bill of Quantities shall be deemed to include for the full, entire and final condition of the contractor respective items of the works in accordance with the provision of the contract.

1.0.2 The tendered rate shall include for all taxes, duties, etc. as applicable and shall be quoted on the works contract basis for **Interior works for the Senate hall in the Administrative block at Kerala University of Health Sciences, Thrissur.**

1.0.3 The tendered rate shall remain firm and free from variation due to rise in the cost of materials/ equipment, labour or any other reasons whatsoever during the contract period and valid extension on the case may be.

1.0.4 The quantum of excise duty included in the tendered price, the rate at which they were assumed etc. shall be indicated in the tender.

1.1 UNIT RATES

1.11 Only approved work will be measured on completion and priced as per rates quoted against the respective items.

1.2 BRIEF DESCRIPTION OF PRICING

1.2.1. Unforeseen difficulties for which provision has not been made in the tender will in no way relieve the successful tenderer from the full execution of the work.

1.2.2 The price quoted shall be the final amount for this finished work.

1.3 INCOME TAX

Any payment to the contractor as per contract, will be made after deducting income tax as per the rules and regulations.

1.4 SALES TAX AND EXCISE DUTY

The tenderer shall include all applicable taxes and duties in their quoted rates. The bid which mention that applicable taxes and duties extra shall be summarily rejected.

1.6. SUBMISSION OF BILL

1.6.1. The contractor shall from time to time prepare and submit interim bills of the work executed and on completion of the contract, he shall prepare and submit the final bill. The measurements sheets in support of the interim and final bills shall be prepared by the contractor on the basis of measurements taken by him jointly with the project engineer and the said measurement sheets shall be submitted by him with the relevant bill.

1.7. EXTRA ITEMS

The contractor is bound to carry out any items of work necessary for the completion of the job even though such items may not have been included in the schedule of probable quantities or rates, such items being necessary or essential for completing the job. Variation order in respect of such additional items and their quantities will be issued in writing by the employer.

1.7.1 All shavings, cuttings and other rubbish as it accumulates from time to time during the progress of work and on completion including that of the sub-contractors and special tradesman and all materials condemned by the project engineer shall be cleared and removed from the site by the contractor without any extra charge.

1.7.2 All measuring steel taps, scaffolding, ladders instruments and tools that may be required for taking measurements shall be supplied by the contractor.

1.8. OVER TIME WORK

If the contractor is required to work night or on holidays in order to maintain the time schedule he shall take prior approval from the Engineer-in-charge. He should also provide and maintain at his own cost sufficient lights as may be necessary to enable the work to proceed satisfactorily during the night.

1.8.1. The contractor shall give full facilities to all other contractors working on site. He shall also arrange his programme of work so as not hinder the progress of other trades. The decision of the Engineer-in-charge on any point of dispute between the various parties shall be final and binding.

1.8.2. It is specifically pointed out that the contractor shall not be entitled to any compensation whatsoever on account of delay in procurement or supply of controlled materials and the rates quoted in the contract are fixed till the completion of the contract.

1.8.3. The contractor shall co-operate with other agencies appointed by the owners for the work to proceed smoothly with the least possible delay and to the satisfaction of the owners and the consultants.

1.8.4. The owners shall provide a source for power supply at one convenient point at site. The contractor shall at his own cost install a separate meter at the said source and lay additional cables from the said source also at his own cost. For the electricity consumed by the contractor he shall pay the owner the actual cost at the rate charged by the local authority for power for constructional purposes. The contractor shall also obtain the necessary permit for utilizing power for constructional purposes.

2 SPECIAL CONDITIONS

2.1 EXECUTION WORK

2.1.1. The whole of the work as described in the contract (including bills of materials, specification and all drawings pertaining thereto) and as advised by the Engineer-in-charge from time is to be carried out and completed in all parts to the entire satisfaction of the Employer. Any minor details of construction which are obviously and fairly intended, or which may not have been definitely referred to in this contract, but which are usual construction practice and essential to the work, shall be included in this contract.

2.1.2. Bidder shall furnish letter of authorization and warranty support from the principal company for the following items.

Interior works

- Acoustic wall panels
- Flooring carpets
- Auditorium chair

Audio video system

- Projector
- Motorised Screen
- Display
- Camera
- Video and Switching devices
- Controller
- Micro phone and Audio devices

- Mixers, Amplifiers and Speakers

2.1.3 Bidder shall furnish detailed Specification sheet or Technical literature of each item offered.

2.2. CERTIFICATE OF COMPLETION

2.2.1 The contractor shall intimate to the Engineer-in-charge in writing as and when the works are completed and put into beneficial use in order to enable the consultants to check certify to the owners to take over the work.

2.2.2 The work shall not be considered as completed and put into beneficial use until the EIC have certified in writing that the same has been completed and put into beneficial use.

2.2.3 The defects liability period of one year shall commence from date of such completion or any specific date mentioned therein.

2.2.4 For Audio video equipments, minimum two years warranty and Annual Maintenance Contract for minimum three years after the expiry of Warranty period shall be provided.

2.2.5 The original warranty documents of the equipments shall be handed over to the client at the time of handing over of the project.

2.3 Payment terms

- 65% of the contract value on pro-rata basis against open delivery of material at site and stored as directed by HLL and after verification.
- 25% of the contract value on satisfactory erection, installation and commissioning of the complete system on pro-rata basis.
- 5% of the contract value after taking over of the system.
- The balance 5% after the expiry of guarantee/ warranty/ defect liability period. However the final payment after Defect Liability Period shall be released against submission of Bank Guarantee for equivalent amount.

TECHNICAL SPECIFICATION FOR AUDIO VISUAL COMPONENTS


1. DLP Projector	
Approved Brands	Barco, Christie ,Panasonic
Functionality & Scope of work	The projector will be placed in the auditorium and will be mounted from the ceiling, the same shall be placed at a position so as to achieve a screen diagonal size of 189".
Minimum desired Specification	
Description	Desired Specification
Projection Technology	Single Chip DLP.
Light Source	Dual Lamp or Laser LED
Native Panel Resolution	WUXGA(1920X1200)
Brightness	Minimum 8400 Lumens
Aspect Ratio	16:10
Contrast Ratio	Minimum 10000:1
Input	HDMI,DVI-D,RGB,HD-SDI,3GSDI
Zoom and Focus	Should be powered
Lens shift	Powered vertical and horizontal
Keystone Correction	Vertical and Horizontal
Control Ports	RS232 or LAN

2. Heavy Duty Mount	
Approved Brands	B-Tech, Chief, Premiermounts
Functionality & Scope of work	The mount will be installed in the ceiling and the integrator shall provide the appropriate extension rods as per the site condition.
Minimum desired Specification	
Description	Desired Specification
Maximum Load Capacity	25kg(However the integrator can provide a higher capacity mount as per the projector weight)
Tilt	+/-12degree

Roll adjustment	+/-6degree
Swivel	360 Degree
Adjustment	Micro adjustment for precision alignment

3. Motorized Screen with Tab tension	
Approved Brands	Draper, Dalite, Stewart
Functionality & Scope of work	The screen shall be mounted on the vertical wall with the appropriate reinforcement. The screen shall have tab tension with LVC control.
Minimum desired Specification	
Description	Desired Specification
Diagonal Size	189 Inches diagonal
Aspect Ratio	16:10
Control	LVC or Rs232 Control
Tab Tension	Inbuilt
Screen Surface	Matte white
Gain	Unity Gain

4. 43 Inch Full HD display	
Approved Brands	Barco, Christie , Panasonic.
Functionality & Scope of work	The display should a full HD display and will be mounted on to the mobile trolley
Minimum desired Specification	
Description	Desired Specification
Panel Type	LCD/ELED
Native resolution	1920x1080
Inputs	Minimum 3 HDMI,1VGA,1DVI-D,
Speaker	Minimum 20 W inbuilt
Control	IR OR RS232

5. Mobile Cart	
Approved Brands	B-Tech, Chief, Premiermounts
Functionality & Scope of work	The mobile cart will be place in front of the stage and will display the same content of the projection screen , the display will be mounted on the cart in a inclined way
Minimum desired Specification	
Description	Desired Specification
Functional Image	
Screen Size Support	40 to 50 Inches
Maximum load capacity	Upto 60Kgs
Tilt	Fixed position tilt at 0,45,90 degrees
VESA Compliance	As per VESA Standards

6. Transmitter Wall plate with HDMI and VGA	
Approved Brands	AMX, Crestron, Extron
Functionality & Scope of work	The wall plate will be mounted on the podium and will have twisted pair output to the matrix switcher
Minimum desired Specification	
Description	Desired Specification
Input	HDMI and VGA
Output	Twisted Pair
Resolution support	Full HD
HDCP	Should be compatible
Distance support	Upto 100 meters

7. Wireless Collaboration System with POE injector	
Approved Brands	AMX, Crestron, Extron
Functionality & Scope of work	The device shall receive data from laptop or tablet via wireless access point
Minimum desired Specification	
Description	Desired Specification
OS supported	Windows and MAC
Moderator Control	Ability to select up to 4 devices for display at once
Supported document formats	.doc, .docx, .xls, .xlsx, .ppt, .pptx, .pdf
Supported Video Formats	.mp4 with H.264 video and AAC audio
Supported Image Formats	.png, .jpg, .bmp, .gif
Power	POE Injector or Normal Power to be provided

8. Matrix Switcher with control processor	
Approved Brands	AMX, Crestron, Extron
Functionality & Scope of work	The matrix switcher shall support multiple formats like twisted pair inputs, DVI, HDMI at both input and output ports
Minimum desired Specification	
Description	Desired Specification
Input Ports	Minimum 2 twisted Pair Inputs, 2HDMI, 2DVI/HDMI.
Output Ports	Minimum 2 HDMI and Minimum 1 Twisted Pair
Resolution Support	Full HD at input and output. 1920X1200 @60Hz
Matrix Operation	The switcher shall route any input to any output
Audio Support	Presentation Switcher must support the Pass-Thru of Surround Sound audio formation including DTS-HD and Dolby TrueHD.
Audio De-Embedding	Presentation Switcher shall have the capability to De-Embed audio from all HDMI inputs and send to a separate audio system.
Inbuilt Controller	Controller must include at least 3 communication ports capable of RS-232 and one 1 communication port capable of RS-232,

	RS422, and RS485 communications. must include at least 4 IR control ports, must include at least 4 isolated and independent relay ports that provide contact closure output, must include at least 4 isolated and independent relay ports that provide contact closure output.
HDCP Support	The presentation switcher should support HDCP on all digital Video Inputs.
Distance Support	The Inbuilt receivers and transmitter in the switcher should support a minimum of 100 meters over twisted pair cable.

9. Twisted Pair HDMI Transmitter	
Approved Brands	AMX,Crestron, Extron
Functionality & Scope of work	The device shall transmit HDMI signal over twisted pair to a minimum distance of 80 meters
Minimum desired Specification	
Description	Desired Specification
Input	HDMI
Output	Twisted Pair
Resolution support	Full HD
Control	Control Signals shall be transmitted via the existing twisted pair
Distance Support	Minimum 80 meters
HDCP Support	The transmitter should be HDCP compliant.

10. Twisted Pair HDMI Receiver	
Approved Brands	AMX,Crestron, Extron
Functionality & Scope of work	The device shall receive HDMI signal over twisted pair to a minimum distance of 100 meters
Minimum desired Specification	
Description	Desired Specification
Input	Twisted Pair
Output	HDMI

Resolution support	Full HD
Control	Control Signals shall be transmitted via the existing twisted pair
Distance Support	Minimum 100 meters
HDCP Support	The transmitter should be HDCP compliant.

11. Full HD PTZ Camera	
Approved Brands	Panasonic, Sony, Vaddio
Functionality & Scope of work	The camera should be able to capture the entire area of the hall and the same should be able to be controlled via a camera controller and a mixer.
Minimum desired Specification	
Description	Desired Specification
Resolution	Full HD
Optical Zoom	Minimum 30X
Digital Zoom	Minimum 16X
Sensor	At least 1/2.3 MOS Sensor
Output	HD-SDI
Preset Memory	Up To 100 Positions
Frame rate	Max 30 fps (System frequency 59.94 Hz)
Video output	HDMI HD SDI OUT
Control	RS232
SD Card Output	Micro SD out
Power	DC/ POE

12. Camera Wall Mount	
Approved Brands	B-Tech, Chief, Premiermounts.
Functionality & Scope of work	The wall mount of the camera should have the capability to mount on the walls/ ceiling of the hall at locations where the camera is placed.

13. Compact Live Switcher	
Approved Brands	Panasonic, Sony, Vaddio
Functionality & Scope of work	The live switcher should accept the camera signals from the camera placed in the hall.
Minimum desired Specification	
Description	Desired Specification
Video Input	Analog Composite input:BNCX2 SDI Input BNCX4 HDMIX2 Sets DVID Input X1 Reference Input BNC X2
Video Output	Programme Out BNC X 1 SDI Out X 1 Multi view Output X 1 Advanced Reference Output X 1
Audio Input:	Audio Input : XLR:4sets,HDMI (Embedded Audio) x 2 Sets
Audio Output	Programme Output : SDI (BNC) X 1,,Preview Output : SDI (BNC) X 1,AUX Output : SDI X 1(BNC),Head Phones -M6 x 1
Monitoring Features	Wave form Feature, multi view function.

14. Camera Controller	
Approved Brands	Panasonic, Sony, Vaddio
Functionality & Scope of work	The camera controller should have the control facilities for the Pan, Tilt and Zoom capabilities of the camera via a joystick controller.
Minimum desired Specification	
Description	Desired Specification
Number of cameras that can be connected	Minimum 5
Preset memory per camera	100 memory locations.
Connectivity	Serial Connectivity should be available for connection.

16. 3G-SDI to HDMI Scaler with Audio Embedding	
Approved Brands	Extron, RGB Spectrum.
Functionality and Scope of Work	Provide a video scaler that shall support one input and one output with a buffered loop-through for processing and converting 3G-SDI, HD-SDI, and SDI video sources to HDMI
Minimum Required Specifications	
Video Input Requirements	One BNC for 3G-SDI/HD-SDI/SDI, shall support 3G-SDI/HD-SDI/SDI signals up to 2.97 Gbps and comply with SMPTE 259M, 292M, 424M, and ITU standards. Shall provide image adjustments like brightness, contrast etc. Shall provide options for saving video settings and picture adjustments. Input presets shall be able to save and recall electronically via RS-232 or USB connection.
Video Output Requirements	Provide One HDMI & One BNC for 3G-SDI/HD-SDI/SDI loop-through video output connection. Provide a range of selectable video output rates from 640x480 to 1920x1200, including HDTV 1080p/60 and 2048x1080p/60, Shall provide image scaling and video format conversion Provide aspect ratio control. Support image freeze via RS-232 or USB connection for operator convenience. Shall provide a low power standby state selectable via RS-232 or USB.
Audio Requirements	Provide a balanced/unbalanced line level analog stereo, One BNC, SDI embedded AES3 audio input connections. Provide One HDMI, embedded audio output connection. Support embedding of any analog audio input signal or up to four pairs of AES3 audio channels from the SDI input onto the HDMI output Provide a delay in the audio output to match the corresponding video processing delay. Support individual muting of the analog stereo or SDI audio input. Provide gain and attenuation adjustments for analog input audio
Control Requirements	Provide a captive screw: RS-232 control connections, Mini USB-B, provide alternatives for configuration and operation, On-screen menus navigated using front panel controls, Product configuration software connected via USB, Serial commands sent over RS-232 or USB connection, Support disabling of front panel controls.

17. Professional Table Top cardioid microphone set with Minimum 50 cm gooseneck and inbuilt base with programmable button for push to talk, push to mute, on/off, LED status indicator.

Functionality and Scope Of Work	
Approved Brands	Revolabs, Country Man, AKG,
Minimum Required Specification	
Polar pattern	Cardioid
Frequency range	70 to 18,000 Hz
Max. SPL	125 dB (for 1% THD)
Equivalent noise level	<21 dB-A
Signal/noise ratio (A-weighted)	>73 dB
Impedance	<=600 ohms
Recommended load impedance	>=2,000 ohms
Supply voltage	9 to 52 V phantom power to IEC 61938 (DPA adapter integrated)
Powering	<3 mA
Connector	3-pin male XLR

18. Wireless Hand Held Microphone	
Functionality and scope of work	
Approved Brands	Revolabs ,AKG ,Rode, Countryman
Required Specification	
Switching bandwidth	<=30.5 MHz
Sensitivity	6.3 dBmicroV / -100 dBm
Diversity System	Microprocessor-controlled diversity
Modulation	Wideband FM
Audio bandwidth	35 – 20 000 Hz (\pm 3 dB)
T.H.D.	<= 0.3 %
SNR (A-weighted)	typ. 120 dB(A)
Hand Held Transmitter with Capsule	
Switching bandwidth	<=30.5 MHz

RF output power	10 or 50 mW
Modulation / Bandwidth	Wideband FM
Microphone capsules	condenser (cardioid)
Max. SPL	≤ 144 dB SPL
Audio bandwidth	35 – 20 000 Hz (± 3 dB)
T.H.D.	≤ 0.7 %
SNR (A-weighted)	> 120 dB(A)

19. Wireless Lapel Microphone

Functionality and scope of work	The lapel Microphone will be worn by the presenter at times of presentation.
Approved Brands	Revolabs ,AKG, Rode, Countryman
Minimum desired Specification -Receiver	
Description	Desired Specification
Switching bandwidth	≤ 30.5 MHz
Sensitivity	6.3 dBmicroV / -100 dBm
Diversity System	Microprocessor-controlled diversity
Modulation	Wideband FM
Audio bandwidth	35 – 20 000 Hz (± 3 dB)
T.H.D.	≤ 0.3 %
SNR (A-weighted)	typ. 120 dB(A)
Body Pack Transmitter	
Switching bandwidth	≤ 30.5 MHz
Modulation	Wideband FM
Audio input	TB3M / 3-pin mini-XLR socket (max. 2.5 Vrms)
Audio bandwidth	35 – 20 000 Hz (± 3 dB)
T.H.D.	≤ 0.7 %
SNR (A-weighted)	> 120 dB(A)

Condenser Lavalier Microphone	
Polar Pattern	Cardiod
Audio frequency bandwidth	15 to 18000 Hz
Equivalent noise level	34 dB-A
Sensitivity	8.8 mV/Pa
Signal to Noise	60 dB-A
Electrical impedance	200 Ohms
Recommended load impedance	2000 Ohms
Voltage	1.5 to 10 V
Current 2 mA	2 mA
Audio Output	3pin Female XLR

20.12 Channel Automatic Audio Mixer with Individual Acoustic Echo Cancellation (AEC)	
Approved Makes	BSS, Polycom, Symetrix
Desired Specification	
Mic/Line Inputs:	Nominal gain 0dB, electronically switchable up to +48dB, in +6dB steps
Analog Inputs	12 electronically balanced on Phoenix Combicon removable screw connectors
Maximum Input Level:	+20dBu with 0dB input gain, +8dBu with 12dB gain
CMRR:	>75dB at 1KHz
Phantom Power:	48V nominal, selectable per input
Analog Outputs	: 8 electronically balanced on Phoenix/Combicon removable screw connectors
Frequency Response	: 20Hz-20KHz (+0.5dB/-1dB)
Crosstalk:	<-75dB
AEC Processing:	12 independent algorithms

AEC Processing Latency (Full Bandwidth Algorithm)	1609/Fs [33.52ms@48k
Tail Length:	200 ms

21.Line Array Column Speakers	
Functionality and scope of work	The Line array column speakers should have the capability to cover the entire area of the hall.
Approved Makes	Atlas Sound,JBL,Tannoy.
Desired Specification	
Components:	Four 130 mm (5 in) LF drivers;Sixteen 25 mm (1 in) HF drivers
Frequency Range (-10 dB)1:	60 Hz – 20 kHz
Coverage:	Narrow Mode: 25° (2 kHz - 16 kHz) (±10°) Broad Mode: 45° (750 Hz - 16 kHz) (±10°) Horizontal 150° (500 Hz – 8 kHz, ±20°)
Sensitivity (2.83V@ 1m)1:	Narrow: (speech mode) 98 dB (1 kHz - 8 kHz) (music mode) 93 dB (300 Hz - 18 kHz) Broad: (speech mode) 96 dB (1 kHz - 8 kHz) (music mode) 92 dB (300 Hz - 18 kHz)
Nominal Impedance:	8 ohms
Power Capacity	500 W (2000 W peak), 2 hrs 350 W (1400 W peak), 100 hrs
Max SPL	Narrow: (speech mode) 125 dB contave (131 peak) (music mode) 120 dB contave (126 peak) Broad: (speech mode) 123 dB contave (129 peak) (music mode) 119 dB contave (125 peak)

22.4Channel 600W@40hms Power Amplifier

Functionality and scope of work	The power amplifier should have the capability for powering the Line array speakers that are kept in the hall.
Approved Makes	Atlas Sound, Crown, Labgruppen
Minimum desired Specification	
Description	Desired Specification
Signal to Noise Ratio (A-weighted)	>108dB
Total Harmonic Distortion (at full rated power, 20Hz - 20kHz)	0.35%
Voltage Gain	34dB
Input Impedance (nominal balanced, unbalanced)	10k Ω , 5k Ω
Maximum Input Level before Compression	+20dBu
Maximum Input Level before Compression	+26dBu
Load Impedance Stereo/Dual Mode	2 Ω - 16 Ω ; 70Vrms and 100Vrms
Load Impedance Bridge Mono	4 Ω - 16 Ω ; 140Vrms and 200Vrms
Damping Factor	>1000

23.Advanced Feed Back Suppression Processor	
Functionality and scope of work.	The feedback suppressor should have the capability to avoid the audio feedback that might occur in the hall.
Approved Makes	DBX, Labgruppen, Midas
Desired Specification	
Number of analog Inputs	2
Input Type	Electronically balanced/unbalanced, RF filtered
Input Impedance	Balanced 50k Ω , Unbalanced 25k Ω
CMRR:	>40dB, typically >55dB @ 1kHz

Number of analog outputs	2
Output Type	Electronically balanced/unbalanced, RF filtered
Output Impedance	Balanced >120Ω, unbalanced >60Ω
Dynamic Range	: >110dB A-weighted, >107dB unweighted, 22kHz BW
A/D Conversion:	24-bit
Sample Rate:	48kHz
Dynamic Range:	>107dB A-weighted, >104dB unweighted, 22kHz BW
Frequency Response:	20Hz – 20kHz, +/- 1.0dB
Inter channel Crosstalk	: >100dB typical

24. 1500W Powered Stage Monitor Speaker

Functionality and scope of work	The powered speaker will be placed in the diaz which will contribute as a reference speaker for the stage area.
Approved Makes	Atlas Sound,JBL, Tannoy.
Minimum Required Specification	
Power Rating	Minimum 1400 W
Frequency Range	40 Hz – 18 kHz
Frequency Response	60 Hz – 18 kHz
Coverage Pattern	Min 85° x 45° nominal
LF Driver	Min 12“

25. Powered Reference Monitor Speakers. With L+R Pair

Functionality and Scope of work	The powered speaker will be in the control room as a reference speaker for the operator.
Approved Makes	Atlas Sound, JBL, Tannoy.
Transducers	5.25 in low frequency loudspeaker and 0.6-inch tweeter
Frequency Range	85 Hz - 18 kHz
Amplifier Power	30 Watts per channel

Maximum SPL Per Pair	115 dB
Signal Input Connectors	XLR / RCA
Headphone Jack	3.5 mm (1/8")
Mounting kit	The Master Speaker and Extension Speaker shall be wall-mounted using suitable mounting kit.

26. Antenna System	
Functionality and scope of work.	The antenna system should be capable of boosting the signals for the Handheld and Lapel microphones covering the entire hall
Approved Makes	AKG, Blue, Revolabs
Active directional antenna	
The Antenna should be able to receive the signals from the microphone and connect it directly into the receiver. Should have sufficient frequency range and has to be water proof construction.	
Coverage angle	70 degree
Frequency Range	500 to 900 MHz
Antenna Gain	Min 20 dB
Antenna Power Splitter	
Should be a wide band UHF active antenna with power splitter that can feed min 4 receivers with RF signal from antenna and supplies power to receivers vis BNC cables.	
Switching bandwidth	500 to 900 MHz
RF input	Min 2 Nos of BNC at 50 ohms
RF Output	Min 8 Nos of BNC at 50 ohms
Cable for antennas	
Antenna cable should have minimum 20 Mtr length with Gold plated BNC connectors on both ends.	
Length	20 Mtrs
Impedance	Min 50 ohms
Connectors	BNC Gold Plated at both the ends.

27.Ipad Air Wifi 16 GB Silver	
Functionality and scope of work	I-Pad for the integration of AV devices Using the Licence provided by the OEM
Approved Brands	Apple
Memory	16gb
Wi-fi Connectivity	Wifi Should be there
Application	The required application for the control should be loaded into the control processor as well as into the ipad If any additional license to be procured the same has to be included

28.Inductive charging protective case for the above I pad (white)	
Approved Brands	Crestron, Kensington, Launch Port
Desired Functionality	Provide a portable charging frame for ipad which should be able to place on a base station.
Detailed Specification	
	Should work with iPad Air & iPad Air 2. It should be ergonomically designed and easy to hold and operate. Requires a pad which will fit iPad Air 2 into it. Should be white in color to match the aesthetics of the room.

29. Wi-Fi Router	
Approved Brands	Asus, Cisco,Dlink

30.8port Gigabit Switch	
Approved Makes	D-Link Cisco,Asus.

31. Ultra Flexible HDMI Cable 6 ft	
Approved Brands	Crestron, Extron, Kramer
Desired Functionality	The cable shall support resolution of 1080p @ 60 Hz and 4K
Detailed Specification	
Function	Ultra-flexible HDMI cables
Resolution Support	4K and 1080p/60 Hz
Length	6 ft
Cable Specifications	Shall confirm the high speed cable specifications. Shall support 4K @ 30 Hz (4096 x 2160), UHD @ 30 Hz (3840 x 2160), and 1080p @ 60 Hz signals & 4K @ 60 Hz in 4:2:0 color space Data rates to 10.2 Gbps Color depth up to 48 bits - 16 bits per color
Connector	30 AWG copper wire construction, Gold-plated contacts

32. VGA with Audio 6 ft	
Approved Brands	Crestron, Extron, Kramer
Desired Functionality	The cable shall support resolution of 1080p @ 60 Hz
Detailed Specification	
Construction	Micro high resolution coax cable with a 15-pin HD male connector and audio cable with a 3.5 mm mini plug on each end. On one side, the audio cable is 24 inches long, and on the other side, the audio cable is 8 inches long. All ID bits are passed through this cable and pin 9 of the 15-pin HD male connector effectively becomes a +5VDC power source, provided the computer has a graphic card that complies with the VESA DDC standard
Molding	Injection mold with overall foil shield
Connector	Terminated with high quality molded VGA connectors and 3.5 mm connectors for audio
Length	6 ft
Feature	EMI insulation feature shall be built in.

33. Microphone bulk cable	
Approved Brands	Belden, Canare, Extron
Desired Functionality	22 AWG high conductivity bare copper conductor with PVC installation and Jacket.
Detailed Specification	
Conductor	1 Pair of 22 AWG Bare copper
Insulation	PVC
Overall Nominal Diameter	Should not be more than 6 mm
Max. Recommended Pulling Tension	120.101 N
Stranding	7 X 30

34.HD-SDI RG6 Cable	
Approved Brands	Belden, Canare, Extron
Desired Functionality	18 AWG solid bare copper, foam polyethulene insulation and PVC Jacket
Detailed Specification	
Conductor	18 AWG Bare Copper
Insulation	PVC
Overall Nominal Diameter	Should not be more than 1.106mm
Max. Recommended Pulling Tension	284.685N

35.Speaker Cable	
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Approved Brands	Belden, Canare, Extron
Desired Functionality	12 AWG stranded (19 X 25) bare copper conductors, PVC insulation, twisted pair, PVC jacket.
Detailed Specification	
Physical Characteristics	1 pair, 12 AWG, bare conductor
Insulation	By PVC
Max. Recommended Pulling Tension	676 N
Stranding	19 x 25

36.Shielded Cat6 cable	
Approved Brands	Belden, Dlink, Extron
Desired Functionality	Shall provide enhanced performance cable for transmission of high speed data, digital and analogue voice and video (RGB) signals on LANs. Shall support Gigabit Ethernet (1000 baseT) standard. Shall operate at bandwidth of 250 MHz. Tinned Copper Screening needed for protection against EMI and avoid signal loss.
Construction	23 AWG solid bare copper with high density polyethylene. Shall have 2 insulated conductors twisted together.
Electrical Properties	Conductor Resistance: 9.38 Ω /100m Mutual Capacitance: < 5.6nF/100m Resistance Unbalance: 5% Max Capacitance Unbalance: 330pF/100m Delay Skew: < 45nS
Category	Cat 6

37.Equipment Rack	
Approved Brands	Valrack,President
Rack Size	42U
IEC Power Strips	3 Nos (10/ Strip)
Full Shelf	4 nos
Cantilever Shelf	2 Nos
Front Door	1 No
Side cover & back door	Full cover
Castors with lock	2 Nos
Castors without lock	2 Nos
Cooling Fan	2 Nos
Width x Depth	600 x 800 mm

Approved List of Makes - AV system		
SI No	Description of the item	Approved List of Makes
	<u>Video Projection System</u>	
1	Projector	Barco, Christie, Panasonic
2	Projector Lens	Barco, Christie, Panasonic
3	Projector Mount	B Tech, Chief, Premier
4	Projector Screen	Draper, Dalite, Stewart
5	43 inch LED Display	Barco, Christie, Panasonic
6	Display Mount	B Tech, Chief, Premier
7	Confidence trolley	B Tech, Chief, Premier
8	Wireless collaboration gateway	AMX, Crestron, Extron
9	DTP Transmitter for HDMI and VGA	AMX, Crestron, Extron
10	8x6 Scaling Presentation Matrix Switchers with DTP Extension and Control - 2 x 50 Watt Stereo Power Amplifier	AMX, Crestron, Extron
11	HDMI Twisted Pair Receiver/Transmitter	AMX, Crestron, Extron
12	Streaming Media Processor	AMX, Crestron, Extron
13	HDMI Interface Cable 6 feet	AMX, Crestron, Extron
14	Male to Male 15-pin HD Micro HR with Audio Cables 6 feet	AMX, Crestron, Extron
15	Micro Digital Ultra-Flexible HDMI Cable - 3' (90 cm)	AMX, Crestron, Extron
	<u>Audio system</u>	
16	Desktop microphone with microphone array Professional table top cardioid microfone set	Revolabs, AKG, Blue, Rode, Country man
17	Wireless hand held microphone	Revolabs, AKG, Blue, Rode
18	Wireless lapel microphone	Revolabs, AKG, Blue, Rode
19	Line array speaker	Tannoy, JBL, Atlas Sound
20	12 Channel Automatic Audio mixer with AEC	Midas, Harman, Yamaha
21	Power Amplifier	Atlas Sound, Lagruppen, Crown.
22	Feedback Suppression Processor	Lake, DBX, Midas
23	Powered Stage Monitor amplifier	Tannoy, JBL, Atlas Sound
24	Monitor Speakers	Tannoy, JBL, Atlas Sound
25	Antenna system	Revolabs, AKG, Blue, Rode, Country Man
26	Two way Wifi I pad	Apple

27	Protective case for iPad and Magnetic table mount and inductive charger. Works with LaunchPort Sleeves	Iport, Crestron
28	I-PAD license	Crestron, Extron, AMX
29	HDMI Cable	Crestron, Extron, Kramer
30	Wifi router for stage area	Asus, Dlink, Cisco
31	8 port Network switch	Asus, Dlink, Cisco
32	Microphone cable 22 AWG stranded	Belden, Canare, Extron
33	HD RG 6 Cable	Belden, Canare, Extron
34	Speaker Cable 2 pair	Belden, Canare, Extron

LIST OF APPROVED MAKES (INTERIOR WORKS)		
Sl. No	Item	Make
1	Partitions	Gyproc / USG
2	Gypsum Ceiling	Gyproc / USG
3	Acoustic Wall Panel	Armstrong /Ecopanel
4	Painting	Asian / Berger / ICI
5	Marine Plywood	Green ply/ Century/Trojan ply
6	Laminate	Merino / Greenlam / Century
7	Carpets	Carus(Beaulieu international)/ Aqua
8	Laminate wooden flooring	Egger / Armstrong /Kronotex
9	Auditorium Chairs	Penworkers / Krueger International
10	Hard wares	Dorma / Haeffele

BILL OF QUANTITIES

Abstract

SI No.	Description	Amount (Rs.)
1	Part I – Acoustic Interiors	
2	Part II – Audio Visual System	
	Total	

Signature of the Bidder with date

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
	<u>Part I- Acoustic Interiors</u>				
	<u>A - INTERIOR WORKS</u>				
1	Partitions Providing and fixing 100mm thick Dry wall Partition Galvanized steel system components (Studs and Channels) of 4m height including flooring and ceiling channel of size 72x32x32 and vertical C stud support of size 70x34x36 at every 61mm c/c and horizontal supports of size 48x40 at every 450mm, 900mm, 1500mm, 2100mm, 3000mm 3600mm & roof level fixed in position. 12mm thk. Gypsum board to be fixed using screws on either side of the Wall studs using 25mm long Dry wall screws at 300 mm C/C. The horizontal and vertical joints of the Panel to be staggered and all joints to be taped and finished with joint Paper tape and jointing compound. The Gypsum board joints to be finished in all respects (using tape, wall putty if required) ready to receive interior finishes, as per project specifications.	sq.m	65		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
2	<p>Gypsum False Ceiling</p> <p>Providing & applying gypsum suspended false ceiling up to any height above floor level, including fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive). Consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50mm long with 6mm dia bolts. Other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size. The other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre. This shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long dry wall screws @ 230 mm interval.</p>	sq.m	230		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
3	Glazed Doors Providing and fixing in position 12mm thick Clear Toughened Glass Doors of size 1000mmx2100mm by using various glass patch fittings to be fixed with necessary fittings, by using necessary hardware to complete the job in all respect. Rate includes cost of glass door with approved hardware such as patch fitting, lock, handles, floor spring etc. of approved make. The contractor is required to obtain approval for fixing details of the doors from Engineer-in-charge before execution of work. All complete as per instructions of Engineer-in-charge.	Nos	4		
4	Acoustical wall panels Providing and fixing of Armstrong 'Optra Acoustical Wall Paneling' with square edges made of fibre glass substrate 25mm thick and wrapped on the front side with an acoustically transparent and classified for Fire reaction Class B-s1, d1 as per EN13501, fabric with an option of colors –Ivory, Autumn Orange, Pista Green, Straw Gold, Rustic Green, Burgundy, Rust, Peacock Blue, Ash Grey, Mocha as per the choice of the Site Engineer of sizes 600X1200/600x600/600x2100 mm providing a minimum sound absorption level of 0.90 NRC to be affixed to wall .	sq.m	510		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
5	Painting Painting with two coats of acrylic emulsion paint, two layers of putty, one coat primer and smoothened with water paper including cost and conveyance of all materials, labour charge, scaffolding etc complete.	sq.m	685		
6	Plywood partition with laminate Providing and fixing ply wood partition using, violet wood for back frame and, first quality Marine ply wood of thickness 12mm on both sides with laminate finish including all carpentry and transporting, loading, unloading charges and scaffolding hire and labour, hardware, adhesive etc.	sq.m	78		
7	Teak Wood Partition Providing and fixing teak wood partition using, violet wood for back frame and, first quality Marine ply wood of thickness 12mm on both sides with 6mm teak wood finish including all carpentry and transporting, loading, unloading charges and scaffolding hire and labour, hardware, adhesive etc. Rate to include melamine polishing.	sq.m	17		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
8	Laminated Box Paneling Providing and fixing Laminate finished wooden Box paneling consisting of 12mm thick Flexi Ply cold pressed with 1.5mm thick Laminate of Approved make & shade in design and pattern as per drawings. The panels shall have grooves of 7.5 mm x 7.5 mm at corners with 6mm thick wooden lipping around the grooves/or SS laminate as per drawing. The panels and the groove shall be spirit polished and finished with melamine matt coating to an even shade as per the approval of the Engineer in charge.	sq.m	20		
9	Hand Rail Stainless steel hand rail with 45mm dia/25mm dia SS tube as per drawing.	RM	9		
10	Flooring Providing & fixing of "Saxony" construction, tufted, 1/10 gauge, 100% type 6 Crealon® nylon, roll type carpet, style name "Commodore-800", "Carus" Belgium, suitable to be used in Auditorium. The selected carpet should have inbuilt "Scotch guard®" "Type 6 Crealon® Nylon", and "Weave back®" for better performance. It should have a standard length & width of 25m and 4m respectively. The carpet should have a minimum pile height of 7mm, with a total height of 9mm, should also	sq.m	550		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
	have a minimum pile weight of 800g/m ² and a minimum total weight of 1650g/m ² , to ensure adequate quality for the said usage. The carpet should have minimum 185040/m ² number of tufts, to ensure good density to perform under heavy traffic usage. The carpet should also have color fastness standard of minimum 4 or more for rubbing (wet or dry), water or light. It should also have thermal resistance of 0.072m ² K/W and impact sound insulation of minimum 25 or more. The rate should also include providing & fixing 8 mm underlay, all taxes & labour.				
11	Laminate wooden Flooring Providing and fixing of laminate Wooden flooring with dimensions 1291mm(l) x 193mm(w) x 8mm(thick) having AC4 abrasion resistance backed by HDF swell stop plus core board with glueless locking installation system and class 32 usage classification.	sq.m	46		
12	Auditorium - Chairs. Providing and fixing of Push back chair (without ABS back) with simultaneous movement of seat and back with auto stop at all places Height of 36" (914.4mm) Back rest of size 470 x 130 x 140 to 770mm (as required by the client) Seat size of 480 x 490 x 160mm Side panels covered with fabric and fused with foam. Handles in wooden finish ISO9001, ISO14001, OHSAS – 18001 Certified and BIFMA with 5 Years Warranty against	Nos	240		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
	manufacturing defect.				
13	Auditorium Tables Providing and fixing of Tables with Table top of 18mm BWP marine ply with 1mm laminate with necessary support legs made of 18mm BWP marine ply with laminate and modesty panel made of 12mm BWP marine ply laminate as per drawing.	RM	145		
14	Flush Doors Providing and fixing 35mm thick flush door shutters(Solid core type) with teak wood frame with 1mm laminate on both sides with teak wood lipping all around the shutter, including 4nos heavy type 100mm long thick ss butt hinges with matching screw in shutters including architraves as per drawing and necessary supports to partition.	sq.m	8.4		
15	Platform for main area and stage Fabricating and fixing in position of seating platform and stage platform using MS angle sections of size 50x50x6mm/40x40x6mm/25x25x6mm.Rate to include painting of steel sections with two coats of best quality black enamel paint, over a coat of Zinc chromate primer after scraping and sanding the fabricated steel and ensuring that all welding joints are well finished by grinding and filling in with metal putty	Kg	15000		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
16	Providing and fixing of two layers of 18mm thick BWP marine ply(Green optima G 710 BWP/equivalent) as platforms. Rate to include fixing of 40x40 Ms (14 guage) for supporting plywood flooring.	sq.m	325		
17	Providing and fixing of single layer 18mm thick marine ply (Green optima G 710 BWP/equivalent) as riser verticals.	sq.m	25		
18	SS Profile Providing and fixing SS profile of 1.25"	RM	150		
19	Podium Providing and fixing of podium size 115cm L x 40cm W made of 18mm thick marine ply (Green optima G 710 BWP/equivalent) with veneer. Rate to include melamine polishing.	Nos	1		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
20	Dismantling, Realignment and Reinstallation of existing False Ceiling	sq.m	480		
21	Scaffolding Charges Providing and fixing double scaffolding system (cup lock type) on the exterior side, up to seven story height made with 40 mm dia M.S. tube 1.5 m centre to centre, horizontal & vertical tubes joining with cup & lock system with M.S. tubes, M.S. tube challies, M.S. clamps and M.S. staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for the required duration as approved and removing it thereafter. The scaffolding system shall be stiffened with bracings, runners, connection with the building etc wherever required for inspection of work at required locations with essential safety features for the workmen etc. complete as per directions and approval of Engineer in-charge. The elevational area of the scaffolding shall be measured for payment purpose .The payment will be made once irrespective of duration of scaffolding	sq.m	480		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
22	Foldable Partition Providing and fixing foldable partition made of 18mm plywood with Laminate with hardware, hinges and all accessories etc completed. All hardware to be Hafele make or equivalent.	sq.m	24		
	B - ADDITIONAL WORKS – PROVIDING PROTECTION OF EXISTING HVAC DUCT				
23	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete. Hot finished seamless type tubes.	Kg	330		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
24	Providing and fixing pre coated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm (+ 0.05 %), total coated thickness with zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length upto 12 metre or as desired by Engineer-in-charge. The sheet shall be fixed using self-drilling /self-tapping screws of size (5.5x 55 mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces, excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	Sqm	52		
25	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade	Sqm	20		
	C- ELECTRICAL WORKS				
26	Supplying and fixing suitable size GI/PVC box with modular cover plate in front on surface or in recess, including providing and fixing 6 pin 5/6 & 15/16 amps modular socket outlet and 15/16 amps modular switch, connection etc. as required.	Nos	17		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
27	Supplying and fixing suitable size GI/PVC box with modular cover plate in front on surface or in recess, including providing and fixing 3 pin 5/6 amps modular socket outlet and 6 amps modular switch, connection etc. as required.	Nos	146		
28	Ditto , but 5/6 A switch	Nos	60		
29	Wiring for circuit/ sub main wiring alongwith earth wire with the following sizes of PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required (for LED step light, cove lighting and 6A/16A sockets)				
a	2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire	Mtr	1200		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
b	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire	Mtr	1600		
c	2 X 4 sq. mm + 1 X 4 sq. mm earth wire	Mtr	250		
d	4 X 10 sq. mm + 2 X 10 sq. mm earth wire	mtr	140		
30	Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of PVC insulated copper conductor, single core cable in surface in PVC mini trunking/casing capping as required(for 6A sockets on table)				

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
a	2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire	mtr	500		
31	Supply and fixing 6W TPN DD DB with 63A 4P isolator with 63A 100mA ELCB as incomer and 6-32A SP MCB as outgoing.	Nos	2		
32	Supply and fixing LED type step light 1W in suitable size MS/GI box in recess with cover plate, including giving, connections etc. as required.	Nos	24		
33	Supply and Fixing of Flexible LED Strip light high power LED strip with LED Driver fixed to the ceiling with 3M adhesive tape and aluminium profile.	mtr	150		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
34	Supply and fixing of Vertical Distribution Board, 4 way TPN sheet steel dust protected, with 63 A TPN isolator – 1 no as incomer and 4 nos of 40 Amp TP MCB as outgoings	Nos	1		
35	Supply, laying and termination of armoured cable 4 core 25 sq mm	mtrs	100		
	TOTAL – Part I				
A	Video Projection, switching and control system				
1	Supply, Installation, Testing and Commissioning of <u>WUXGA DLP Projector</u> , Ceiling Mounted, 8500 ANSI Lumens	No	1		
2	Supply and Installation of <u>Ceiling Mount Bracket</u> for the above projector.	No	1		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
3	Supply, Installation, Testing and Commissioning of <u>Motorized projector screen</u> , 189 inch diagonal, aspect ratio 16:10, Matt White with LVC control	No	1		
4	Supply, Installation, Testing and Commissioning of 43 inch <u>Full HD LED Display</u> (confidence monitor)	No	1		
5	Supply and Installation of <u>Portable Mobile cart</u> for the confidence monitor.	No	1		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
6	Supply, Installation, Testing and Commissioning of <u>Wallplate</u> - White Colour, Two Input DTP Transmitter for HDMI and VGA.	No	1		
7	Supply, Installation, Testing and Commissioning of <u>Wireless Presentation system</u> (Collaboration Gateway)	No	1		
8	Supply, Installation, Testing and Commissioning of <u>PoE injector</u>	No	1		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
9	Supply, Installation, Testing and Commissioning of <u>multi format 6 x 6 Matrix Switcher</u> with DTP Extension and Control.	No	1		
10	Supply, Installation, Testing and Commissioning of <u>HDMI Twisted Pair Transmitter</u>	No	1		
11	Supply, Installation, Testing and Commissioning of <u>HDMI Twisted Pair Receiver.</u>	No	2		
	Sub total of A - Video Projection System				
B	Video recording and camera system				

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
12	Supply, Installation, Testing and Commissioning of <u>30 x optical zoom Full-HD Integrated Pan-Tilt HD Camera.</u>	No	3		
13	Supply, Installation, Testing and Commissioning of <u>Ceiling mount bracket</u> for camera.	No	3		
14	Supply, Installation, Testing and Commissioning of <u>camera live switcher</u> for camera.	No	1		
15	Supply, Installation, Testing and Commissioning of <u>Remote Camera Controller</u>	No	1		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
16	Supply, Installation, Testing and Commissioning of <u>3G-SDI to HDMI Scaler with Audio Embedding</u>	No	1		
17	Supply, Installation, Testing and Commissioning of Recorder with <u>external 500GB hard disk</u>	No	1		
	Sub total of B - Video Projection System				
C	Audio System				
18	Supply, Installation, Testing and Commissioning of <u>Professional table top cardioid microphone set with min 50 cm gooseneck and inbuilt base with programmable button for push to talk, push to mute, push to on / off , LED status indicator</u>	No	95		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
19	Supply, Installation, Testing and Commissioning of Wireless Hand held Micro phone	No	2		
20	Supply, Installation, Testing and Commissioning of Wireless Han Lapel Mic	No	1		
21	Supply, Installation, Testing and Commissioning of 12 Channel Automatic Audio mixer with individual AEC	No	9		
22	Supply, Installation, Testing and Commissioning of <u>Line array Column speaker</u> , 500 watts output	No	4		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
23	Supply, Installation, Testing and Commissioning of <u>Four Channel 600 W @ 4 Ohms power Amplifier, 70 V / 100V</u>	No	1		
24	Supply, Installation, Testing and Commissioning of <u>Advanced Feedback Supression Processor</u>	No	1		
25	Supply, Installation, Testing and Commissioning of <u>Powered Stage Monitor 1500W</u>	No	2		
26	Supply, Installation, Testing and Commissioning of <u>Powered Reference Monitor Speakers</u>	No	2		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
27	Supply, Installation, Testing and Commissioning of Antenna system	No	1		
	Subtotal of C - Audio System				
D	Control system				
28	Supply, Installation, Testing and Commissioning of <u>Two way Wifi I pad</u>	No	1		
29	Supply, Installation, Testing and Commissioning of <u>Inductive charging protective case</u> for iPad 3rd generation and iPad 2 and <u>Magnetic table mount</u> and inductive charger. Works with LaunchPort Sleeves	No	1		
30	Providing of <u>I-PAD license</u>	No	1		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
31	Supply, Installation, Testing and Commissioning of <u>wifi router</u> to be used on stage area	No	2		
32	Supply, Installation, Testing and Commissioning of <u>8 port Network switch</u>	No	1		
	Subtotal of D - Control System				
E	Cables and connectors				
33	Supply, laying and termination of HDMI 6 ft Cable	No	4500		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
34	Supply and installation of Male to Male 15-pin HD Micro HR with Audio Cables 6 feet	No	3400		
35	Supply, laying and termination of Microphone cable 22 AWG stranded (300m)	mtr	3000		
36	HD SDI RG 6 Cable	mtr	300		
37	Supply, laying and termination of 2 pair Speaker Cable	No	600		

Item No	Description of Item	Unit	Quantity	Rate (Rs. in words & in figures)	Amount (Rs.)
38	Supply, laying and termination of Cat 6 cable 4 pair UTP	No	300		
39	Supply and installation of Equipment rack 42 U	No	1		
	Subtotal of E - Cables & connectors				
	Total – Part II - AV system (A+B+C+D+E)				

Annual Maintenance Contract for Audio Video equipments after warranty period

Sl. No.	Amount in Rs.		
	1 st year	2 nd year	3 rd year
1			

Note : The rate for AMC will be considered during evaluation of tenders.