

 <p>IIT PALAKKAD</p>	<p>भारतीयप्रौद्योगिकीसंस्थानपालक्काड  <b>Indian Institute of Technology Palakkad</b>  अहलिआ एकीकृत कैम्पस, कोज़िहपारा  Ahalia Integrated Campus, Kozhipara  पालक्काड- 678557  Palakkad – 678 557</p>	<p>दूरभाषसंख्या/ Phone no:  04923 – 226 586/561  ईमेल/ Email :  purchase@iitpkd.ac.in</p>
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Prof. Job Kurian  
Registrar i/c

Date : 15.05.2018

Open Tender No: IITPKD/ADMN/011/2018

Due Date: 05.06.2018 @ 2.00 PM

Dear Sir/Madam,

On behalf of the Indian Institute of Technology, Temporary campus, Palakkad, Quotations are invited for “Design, Supply, Installation, Testing and Commissioning of Projectors and PA Systems for Classrooms at Transit Campus, IIT Palakkad”. The Specifications are given in the Annexure.

**PART A - Design, Supply, Installation, Testing & Commissioning of Projectors and PA Systems**

**PART B - Design, Supply, Installation, Testing & Commissioning of Wireless Chairman and Delegate unit.**

<b>Pre bid Meeting</b>	<b>21.05.2018 at 10 AM</b>
<b>Tender Opening Date</b>	<b>05.06.2018 at 2.00 PM</b>
<b>Venue</b>	<b>Conference Room No. 102  Academic Block, IIT Palakkad, Ahalia Integrated Campus,  Kozhipara, Palakkad -678 557.</b>

**Instructions to the Bidder**

- (i) **Preparation of Bids:** - The tenders should be submitted **under two-bid system (i.e.) Technical bid and Financial bid in separate envelopes.** The technical bid should consist of all technical details along with commercial terms and conditions. No prices should be included in technical bid. Financial Bid should indicate item – wise prices for the items mentioned in the technical bid. The technical and the financial bids should be put in separate covers and sealed. Both sealed covers should be put into a bigger cover. **Bids must either be spiral bound / stapled together. No loose sheets will be accepted. All pages must be numbered.**
- (ii) **The bidder may quote for Part A or Part B. Technical and Financial bid for each part must be enclosed in separate envelopes. EMD@ 2% for each part should be enclosed in the respective financial bid. All the financial and technical bids must be put in one big envelope and delivered to the purchase section. The evaluation will be done for each part separately and purchase order will be given to the technically qualified bidder, who quotes the lowest price for the respective part. For each of the**

**parts the technical evaluation will be done based on the mandatory requirements for that part mentioned in the specifications.**

- (iii) The Quotations duly sealed and superscribed on the envelope **with the reference No. and due date, should be addressed to the undersigned so as to reach on or before the due date stipulated above.**
- (iv) **Delivery of the tender:** - The tender shall be sent to the below-mentioned address either by post or by courier so as to reach this office before the due date and time specified in the Schedule. The offer/bid can also be dropped in the tender box on or before the due date and time specified in the schedule. **The tender box is kept in the office of the Academic Block, IIT Palakkad, Ahalia Integrated Campus, Kozhipara, Palakkad-678 557.**
- (v) **Opening of the tender:** - The offer/Bids will be opened by a committee duly constituted for this purpose. The technical bids will be opened first and will be examined by a technical committee which will decide the suitability of the bid as per our specifications and requirements. The bidders will be invited for opening of Technical bids. **The Bidder's representative should carry authorization letter from their company empowering them to participate in the Pre-bid and tender opening meetings.** In respect of opening of financial bid, those bidders who are technically qualified only will be called.
- (vi) **Prices:** - The price should be quoted in nett per unit (after breakup) and must include all packing and delivery charges indicated separately for each item. **The price indicated should be CIF/CIP Kochi. The Clearance and transportation of all the equipment to IIT Palakkad is the responsibility of the bidder or its agencies. The associated cost should be quoted separately in the financial bid.** The offer/bid should be exclusive of taxes and duties, which will be paid by the purchaser as applicable. The price should be quoted without custom duty. **The custom duty will be paid at concessional rate against duty exemption certificate.**
- (vii) **Agency Commission:** - Agency commission, if any, will be paid to the Indian agents in Rupees on receipt of the equipment and after satisfactory installation. Agency Commission will not be paid in foreign currency under any circumstances. The details should be explicitly shown in Tender even in the case of 'Nil' commission. The tenderer should indicate the percentage of agency commission to be paid to the Indian agent. **Terms of Delivery:** - The item should be supplied to our Institute as per Purchase order. The installation and commissioning should be completed as specified by us in the attached schedule.
- (viii) **Acceptance & Rejection:** IIT Palakkad reserves the full right to accept / reject any tender at **any** stage without assigning any reason.

Yours sincerely,

**Registrar, IIT Palakkad**

## SCHEDULE

### Important Conditions:

- 1) The due date for the submission of the tender is **05.06.2018 at 2.00 PM**
  
- 2) The offers / bids should be submitted in two-bids systems (i.e.) Technical bid and financial bid. The Technical bid should consist of all technical details / specifications only. The Financial bid should indicate item-wise price for each item and it should contain all Commercial Terms and Conditions including Taxes (separately), transportation, packing & forwarding charges, installation, guarantee, payment terms, pricing terms etc. The Technical bid and financial bid should be put in separate covers **superscribed clearly as “Technical Bid” and “Financial bid”** and sealed. Both the sealed covers should be put in a bigger cover. Open Tender for **“Design, Supply, Installation, Testing and Commissioning of Projectors and PA Systems for Transit Campus, IIT Palakkad”** should be written on the left side of the Outer bigger cover and sealed.
  
- 3) **EMD: -EMD should be at 2% (two percent) of the tender value quoted by the bidder.** The EMD should be enclosed with the financial bid which will not be opened for Technical evaluation. **Enclosing the EMD in the Technical bid will automatically DISQUALIFY the tenderer.** EMD should be in the form of DD in favour of **“Indian Institute of Technology Palakkad” and payable at Palakkad”**. The tender without EMD would be considered as UNSOLICITED and will be REJECTED. Photo/FAX copies of the Demand Draft/Banker’s pay orders will not be accepted. No interest will be paid for the EMD and the EMD will be refunded to the successful bidder on receipt of Performance Security.
  
- 4) **Performance Security:-** The successful bidder will be asked to submit Performance Security for an amount of 5% of the value of the contract/supply. The Performance Security may be furnished in the form of an Account Payee DD or FD Receipt from the commercial bank or Bank Guarantee from any nationalized bank of India. **Only after submission of Performance Security, Purchase Order/Work Order will be released / L.C will be opened.**
  
- 5) **Performance Security in the form of Bank Guarantee:-** In case the successful bidder is a foreign company and wishes to submit Performance Security in the form of Bank Guarantee, the Bank Guarantee should be routed through the Beneficiary Bank to the end user bank. Otherwise, the Indian Agent of the foreign vendor has to submit a Bank Guarantee from a Nationalized Bank of India.
  
- 6) The Bank Guarantee should remain valid for a period of sixty days beyond the date of completion of all contractual obligations of the supplier including the warranty obligations.

If an Indian agent is involved, the following documents must be enclosed:

- Foreign principal's proforma invoice indicating the commission payable to the Indian Agent and nature of after-sales service to be rendered by the Indian Agent.
  - Copy of the agency agreement with the foreign principal and the precise relationship between them and their mutual interest in the business.
- 7) The offer/bids should be sent only for a system or equipment that is available in the market and supplied to a number of customers. A list of customers in India and abroad with details must accompany the quotations. Quotations for a prototype machine will not be accepted.
  - 8) Original catalogue (not any photocopy) of the quoted model duly signed by the principals must accompany the quotation in the Technical bid. No prices should ever be included in the Technical bid.
  - 9) Compliance or Confirmation report with reference to the specifications and other terms & conditions should also be obtained from the principal.
- 10) Validity:** Validity of Quotation not less than 90 days from the due date of tender.
- 11) Delivery Schedule:-** The tenderer should indicate clearly the time required for delivery of the item. In case there is any deviation in the delivery schedule, liquidated damages clause will be enforced or penalty for the delayed supply period will be levied.
- 12)** The items should be delivered to **IIT Palakkad, Transit Campus, West Pudukkottai, Palakkad, Kerala – 678 623**
- 13) Risk Purchase Clause:-** In the event of failure of supply of the item/equipment within the stipulated delivery schedule, the purchaser has all the right to purchase the item/equipment from other sources on the total risk of the supplier under risk purchase clause.
- 14) Payment:-** No Advance payment will be made for Indigenous purchase. 100% Payment after supply and successful installation and commissioning and certification by the end user. In case of import supplies the payment will be made only through **100% Letter of Credit i.e. (50% payment will be released against shipping documents and 50% after successful installation and meeting acceptance criteria wherever the installation is being done).**

**15) On-site Installation:** - The equipment or machinery has to be installed and commissioned by the successful bidder within one week from the date of receipt of the **item at site of IIT Palakkad.**

**16) Warranty/Guarantee:** - The offer should clearly specify the warranty or guarantee period for the machinery/equipment. Any extended warranty offered for the same has to be mentioned separately. (For more details please refer our Technical Specifications).

**17) Late offer:** - The offers received after the due date and time will not be considered. The Institute shall not be responsible for the late receipt of Tender on account of Postal, Courier or any other delay.

**18) Loading and unloading charges will be borne by the bidder/Supplier.**

**19) Acceptance and Rejection:** - IIT Palakkad has the right to accept the whole or any part of the Tender or portion of the quantity offered or reject it in full without assigning any reason.

**20) Do not quote the optional items or additional items unless otherwise mentioned in the Tender documents / Specifications.**

**21) Disputes and Jurisdiction:** - Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within the city of Palakkad in Kerala.

**22) All Amendments, time extension, clarifications etc., will be uploaded on the institute website only and will not be published in newspapers. Bidders should regularly visit the above website to keep themselves updated. No extension in the bid due date/ time shall be considered on account of delay in receipt of any document by mail.**

**Acknowledgement:-** It is hereby acknowledged that the tenderer has gone through all the conditions mentioned above and agrees to abide by them.

**SIGNATURE OF TENDERER  
ALONG WITH SEAL OF THE  
COMPANYWITHDATE**

## AV Specifications for IIT Palakkad

### **Part A**

Tender specification for the Design, Supply, Installation, Testing & Commissioning of Projectors and PA Systems at IIT Palakkad Transit campus (Location Pudussery) to meet all its requirements like Video Conferencing, Board meeting, Interactive sessions etc.: Installation of Audio console to existing VC polycom group 700 in Auditorium IIT Palakkad Temporary campus (Ahalia integrated campus kozhipara), Installation existing VC polycom group 700 with 75 inch LED TV onto trolley and Installation of Audio console to existing PA/VC system at IIT Palakkad Temporary campus Auditorium (Location Ahalia integrated campus Kozhipara).

#### **I. Standard Projector – 14 Nos. Barco/Christie/Epson/ LG/Panasonic/Sony**

**Location** 40 seater classroom 7nos., 80 seater classroom and labs 5nos.

<b>S.No</b>	<b>Specification</b>	
1	<b>Technology</b>	3 LCD Technology
2	<b>Lumens</b>	5,000 Lumen
3	<b>Resolution</b>	WXGA, 1280 x 800, 16:10
4	<b>Aspect Ratio</b>	16:10
5	<b>Contrast Ratio</b>	15,000 : 1
6	<b>Light source</b>	Lamp
7	<b>Lamp</b>	10,000 h durability
8	<b>Keystone Correction</b>	Auto vertical: $\pm 30^\circ$ , Auto horizontal $\pm 20^\circ$
9	<b>Colour Processing</b>	10 Bits
10	<b>Interfaces</b>	HDMI (2) ; RGB (2); Monitor out (1) ; Audio In (3) ; Audio out (1) S-Video (1) ; Video (1) ; USB (2) ; LAN (1)

#### **II. Standard Projector – 2 Nos. Barco/Christie/Epson/ LG/Panasonic/Sony**

**Location** 120 seater classroom

<b>S.No</b>	<b>Specification</b>	
1	<b>Technology</b>	3 LCD Technology
2	<b>Lumens</b>	6,500 Lumens
3	<b>Resolution</b>	WXGA, 1280 x 800, 16:10
4	<b>Aspect Ratio</b>	16:10
5	<b>Contrast Ratio</b>	50000 : 1
6	<b>Light source</b>	Lamp
7	<b>Lamp</b>	4,000 Hours
8	<b>Keystone Correction</b>	Auto vertical: $\pm 30^\circ$ , Auto horizontal $\pm 20^\circ$
9	<b>Colour Processing</b>	10 Bits
10	<b>2D Vertical Refresh Rate</b>	100 Hz - 120 Hz
11	<b>Colour Reproduction</b>	Upto 1.07 billion colours

12	<b>Features</b>	JPEG Viewer, Long lamp life, MHL audio/video interface, PC Free, support for Chromebook, , Slideshow, Split-Screen-Function, Wireless LAN Capable,
13	<b>USB Display Function</b>	3 in 1: Image / Mouse / Sound
14	<b>Interfaces</b>	USB 2.0 Type A, USB 2.0 Type B, RS-232C, Wired Network, Gigabit ethernet interface, VGA in, VGA out, HDMI inx2, Composite in, RGB in, RGB out, MHL, Stereo mini jack audio out, Stereo mini jack audio inx2, Wireless LAN b/g/n, Wireless LAN IEEE 802.11a/b/g/n/ac
15	<b>Accessory</b>	Power cable, Remote control incl. batteries, Software (CD), User Manual (CD-ROM)

**III. Ultra Short Throw Interactive Projector – 1 No. Barco/Christie/Epson/LG/Panasonic/Sony  
Location Conference room**

S.No	Specification	
1	Projection System	3LCD Technology – Ultra Short Throw Interactive
2	Colour Light Output	3,200 lumen
3	Resolution	WXGA, 1280 x 800, 16:10
4	Contrast Ratio	14,000 : 1
5	Lamp	10,000 h durability
6	Keystone Correction	Manual vertical: $\pm 3^\circ$ , Manual horizontal $\pm 3^\circ$
7	Colour Reproduction	Upto 1.07 billion colours
8	Zoom	Digital, Factor: 1 - 1.35
9	Focus	Manual
10	Offset	5.8 : 1
11	USB Display functions	3 in 1: Image / Mouse / Sound
12	Interfaces	USB 2.0 Type A, USB 2.0 Type B, RS-232C, Ethernet interface (100 Base-TX / 10 Base-T), Wireless LAN IEEE 802.11b/g/n (optional), VGA in , VGA out, HDMI in x3, Composite in, RGB in x2, RGB out, MHL, Stereo mini jack audio out, Stereo mini jack audio in x3

**Note :** Including Wall mount kit

**IV. Projector Ceiling Mount Kit - 15 Nos.  
Height (3ft to 6ft Adjustable)  
Location 40 seater classroom 7nos., 80 seater classroom, 120 seater classroom and  
labs 4nos.**

**V. Projection Screen – 15 Nos.**

**Location 40 seater classroom 7nos., 80 seater classroom, 120 seater classroom and labs 8nos.**

S.No	Description	Specification Parameter
1	Type	Electric Screen
2	Size	123 to 128 Inch
3	Ratio	16 : 10

**VI. Magnetic Ceramic White board 1nos.**

**Location Conference room**

- 16 feet x 4 feet
- Matte finish for display and writing
- Tray for pen and felt eraser

**VII. High Definition Display – 2 Nos. Christie/LG/Panasonic/Samsung**

**Location Boardroom and Director Office**

S.No	Description	Specification Parameter
1	Size	75 Inch
2	Type	LED
3	Resolution	3,840 x 2,160 (UHD)
4	Brightness	350cd/m2
5	Interface	DP / HDMI / DVI / RS232C / RJ45 / Pixel Sensor / SD Card / USB
6	Speakers	10W + 10W DP, Audio
7	Other Features	Smart Hub, Smart View, Wi-Fi direct, Wireless LAN, Content share on USB, PIP, RS232C, RJ45, IR Receiver, Pixel Sensor
	Bezel	14.9 mm Even Bezel
	Depth	39.7 mm

**VIII. Document Camera 1 No.**

**Key Features**

Full HD 1080p output resolution

High speed 30fps dynamic image

VGA and HDMI output

Professional 2x sensor zoom

Superior sensor delivery and crystal-clear image quality

Built-in microphone

One-Touch synchronous audio/ video recording

Built-in SD card slot- supports SDHC and SDXC; expandable to 64GB

Jointless, highly flexible gooseneck

Plug-and-Play design

Auto tune function: unique image optimization



Sl. No.	Specification	
1	Zoom	2x Sensor zoom
2	Digital Zoom	12x
3	Mechanical Zoom	9x
4	Output Resolution	XGA, SXGA(1280x960), WXGA, 1080p
5	High Color Reproduction	$\Delta E^*_{ab}$ 9.05 (mean)
6	SNR	51 dB
7	Sharpness	MTF 1023 lines
8	Frame Rate	30 fps
9	Shooting Area Max.	442 x 331 mm (17.4" x 13") > A3 size
10	Close-up	40 mm (1.6")
11	Lamp	<ol style="list-style-type: none"> <li>1. LED side lamp supported by gooseneck</li> <li>2. Built-in LED on camera head</li> </ol>
12	Power Supplied	Internal Power Supply, 100-240VAC
13	USB Image Transmission	USB 2.0 (480 Mbps) high speed transmission
14	Video/Audio Recording	One-touch records image and sound synchronously
15	Built-in Microphone	Yes
16	Image Capture	Single or continuous capturing
17	Auto Tune	Yes, one button for image optimization
18	Image Rotation	0°, 180°, flip, mirror

19	Weight	4.2 lbs (1.9 Kg)
20	Free Lumens™ Software	Support PC Windows 10, 8, 7, XP, Vista, Mac OS Chrome OS, iOS and Android App; WIA and TWAIN interface
21	Dimension: (LxWxH)	Folded : 230 x 140 x 310 mm (9.1" x 5.5" x 12.2" ) Open : 420 x 140 x 395 mm (16.5" x 5.5" x 15.6")

**IX. HDMI Matrix Switcher – 1 Nos. CRESTRON/EXTRON /KRAMER**

**Location 120 seater classroom**

Matrix Switcher with De-Embedder	4 X 4 Matrix Switcher with supporting minimum data rates of 12 Gbps, Switcher shall support minimum resolution of 4096x2160 with 30Hz and color space of 4:4:4. Audio de-embedding feature can be either inbuilt to the Matrix or external hardware to achieve the functionality, Scaler is required to convert VGA signal to HDMI, the scaling function can be inbuilt to matrix switcher or an external device can be provided for scaling function, control system and its user interface to control the AV devices in the room with Volume knob which can be part of the matrix or external unit
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**X. Multiformat Interface for Presentation 16 Nos. CRESTRON/EXTRON /KRAMER**

**Location 40 seater classroom 7nos., 80 seater classroom, labs 7 nos, Conference room, and Boardroom**

<b>Multiformat Interface for Presentation</b>		
<b>Sl. No.</b>	<b>Specification</b>	
<b>1</b>	Meeting Space Collaboration System	Multiformat switcher for HDMI and VGA sources and associated digital and analog audio, plus signal extension over shielded CATx cable, Inbuilt or external unit supporting embedding analog stereo audio signals onto the digital video output signal, multiple embedded audio formats and also have an option for de-embedding audio. Scaling functionality to be achieved using an external or an Inbuilt scaler in Switcher or external device. Provides customisable Automatic switching of inputs at the switcher. Control processor to control the displays and other AV devices to be considered

**XI. Wireless Lapel Microphone Transmitter – 3 Nos. AKG / Sennheiser / Shure**

**Location: 80 seater classroom and 120 seater classroom**

<b>S.No</b>	<b>Specification</b>	
1	Microphone	Condenser
2	Carrier frequency range	500 - 865 MHz
3	Modulation	FM
4	Audio bandwidth	40 - 20,000 Hz
5	T.H.D. at 1 kHz	typ. 0.8% or better
6	Signal/noise ratio	typ. 105 dB(A) or better
7	RF output	10 mW or better
8	Power requirement	1 x 1.5 V AA
9	Battery life	10 hours
<b>Wireless Lapel Microphone Receiver</b>		
1	Carrier frequency range	500 - 865 MHz
2	Modulation	FM
3	Audio bandwidth	40 - 20,000 Hz
4	T.H.D. at 1 kHz	typ. 0.8% or better
5	Signal/noise ratio	typ. 105 dB(A) or better
6	Squelch threshold	.-100 to -70 dBm adjustable

7	Audio outputs	Balanced XLR and unbalanced 1/4" (6.3 mm) jack: adjustable from mic to line level. Output level at rated deviation: 500 mV rms
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**XII. Wireless HeadWorn Microphone Transmitter – 3 Nos. AKG / Sennheiser / Shure  
Location 80 seater classroom and 120 seater classroom**

S.No	Specification	
1	Microphone	Condenser
2	Carrier frequency range	500 - 865 MHz
3	Modulation	FM
4	Audio bandwidth	40 - 20,000 Hz
5	T.H.D. at 1 kHz	typ. 0.8% or better
6	Signal/noise ratio	typ. 105 dB(A) or better
7	RF output	10 mW or better
8	Power requirement	1 x 1.5 V AA
9	Battery life	10 hours
Wireless Lapel Microphone Receiver		
1	Carrier frequency range	500 - 865 MHz
2	Modulation	FM
3	Audio bandwidth	40 - 20,000 Hz
4	T.H.D. at 1 kHz	typ. 0.8% or better
5	Signal/noise ratio	typ. 105 dB(A) or better
6	Squelch threshold	.-100 to -70 dBm adjustable
7	Audio outputs	Balanced XLR and unbalanced 1/4" (6.3 mm) jack: adjustable from mic to line level. Output level at rated deviation: 500 mV rms

**XIII. 12 Channel Audio Analog Mixer – 3 Nos. Behringer/Soundcraft/Yamaha  
Location 80 seater classroom Transit campus Pudussery and 80 seater 2 nos. at Temporary campus Ahalia**

S.No	Specification	
1	12-Channel Mixing Console: Max. 6 Mic / 12 Line Inputs (4 mono + 4 stereo) / 2 GROUP Buses + 1 Stereo Bus / 2 AUX	
2	12-Channel Mixing Console	
3	Max. 6 Mic / 12 Line Inputs (4 mono + 4 stereo)	
4	2 GROUP Buses + 1 Stereo Bus	

5	2 AUX
6	"D-PRE" mic preamps with an inverted Darlington circuit
7	1-Knob compressors
8	PAD switch on mono inputs
9	+48V phantom power
10	XLR balanced outputs

**XIV. 16 Channel Audio Analog Mixer – 2 Nos. Behringer/Soundcraft/Yamaha**  
**Location 120 seater classroom at Transit Campus Pudussery and Auditorium at Temporary campus Ahaila**

S.No	Specification
1	16-Channel Mixing Console: Max. 6 Mic / 12 Line Inputs (4 mono + 4 stereo) / 4 GROUP Buses + 1 Stereo Bus / 4 AUX
2	16-Channel Mixing Console
3	Max. 8 Mic / 12 Line Inputs (4 mono + 4 stereo)
4	2 GROUP Buses + 1 Stereo Bus
5	2 AUX
6	"D-PRE" mic preamps with an inverted Darlington circuit
7	1-Knob compressors
8	PAD switch on mono inputs
9	+48V phantom power
10	XLR balanced outputs

**XV. Portable Active Speakers – 2 Nos. Behringer/JBL/Yamaha**

S.No	Description	Specification Parameter
1	Amplifier	Class D
2	Audio Inputs	3 to 4 channel with phantom power
3	Output Power	300W

**XVI. Rechargeable Battery with charger - Camelion/Panasonic/Sony**

- Rechargeable Battery 1.5AA,2400mAH X2 - 16nos.
- Charger for above - 8 nos

**XVII. Wall mountable Active Speakers – 10 Nos. Behringer/JBL/Yamaha**

**Location 80 seater classroom and 120 seater**

S.No	Description	Specification Parameter
1	Amplifier	Class D
2	Audio Inputs	XLR, phone 6.35 mm
3	Output Power	200W

**XVIII. Specification for Podium 1 No.**  
**Location 120 seater Classroom**

SL No.	Description
1	Full Height Wooden Lectern with Gooseneck Microphone
2	Product Dimensions: 46" H x 23" W x 16" D
3	Material: Scratch Resistant High-Pressure-Laminate

**Gooseneck Microphone for Podium AKG / Sennheiser / Shure**

SL No.	Description
1	Audio frequency bandwidth 20 - 20000 Hz
2	Recommended load impedance 2000 Ohms
3	Type Balanced XLR
4	Gender Male
5	Contacts 3-pin
6	Voltage 9 to 52 V
7	Current 3.5 mA

**XIX. Rack for mounting AV equipment with accessories 15 Nos.**

- 9U standard, front glass door with features
- Minimum 2 numbers of fans
- Power sockets with light indicators (PDU)
- Tray for receivers

**XX. Universal Trolley stand for holding up to 80 inch Display and VC codec 2 No.**  
**Location Boardroom and Director office**

- Adjustable height minimum 165cm
- Adjustable base for codec 30cm X 20cm
- Lockable caster wheels fitted on steel frame
- 3 Power socket and 10 meter cable with 15 amp plug

**XXI. Cables and Connectors AMX/CRESTRON/EXTRON as per actuals in size and quantity**

**Proven reputed brand with lifetime warranty to be quoted**

**The length as mentioned below and numbers may be quoted in units.**

- High Quality branded Cables, Patch Cords & Accessories
- High standard quality HDMI
- High standard quality Projector Communication Cable
- High standard quality Video 3' Composite out to projector cable
- High standard quality Male to Male VGA Cable
- High standard quality CAT5 RJ45 Male to Male
  
- High standard quality Male to Male VGA with Audio Cables
- High standard quality Male to Male VGA with Audio Cables
- High standard quality Power, Switcher Communications and Volume Control Cable

Sl. No.	Items	Specification
1	HDMI Cables	12' / 6' / 3' all are 4K Cables
2	VGA Cables	12' / 6' all are 4K cables
3	Bulk Cables	AUDIO / SPEAKER / Shielded Twisted Pair
4	Bulk Connectors	Branded Connectors for project as per site.

**Conector - 20 Nos.**

- High standard Mini Displayport to HDMI connectors
- High standard Displayport to HDMI connectors
- High standard C type USB to HDMI Connectors

**XXII. HDMI Audio De-embedder – 9 Nos. Crestron/Extron/Kramer**

**Location 40 seater classroom 7 nos., 80 seater classroom and 120 seater**

S.No	Description	Specification Parameter
1	Connectors - Input	1 x HDMI Type A Female (Black)
2	Connectors - Output	1 x HDMI Type A Female (Black) 1 x Toslink (Black) 1 x RCA (Orange) 2 X RCA (Red / White)
3	Video Resolution	Up to 1920 x 1080

**This is not required if de-embedder is inbuilt in the item no. IX and X**

**HDMI Audio De-embedder (if the Matrix/Switcher doesn't have it inbuilt)**

- # Should support the same resolution supported by the Matrix/Switcher used in the system
- # For the Digital Applications the de-embedded audio is made available on S/PDIF outputs in its native two-channel or multi-channel Dolby® Digital or DTS format.
- # For analog audio applications, the de-embedded signal is made available as line level stereo audio

**XXIII. VGA-HDMI Scaler: – 15 Nos. Crestron/Extron/Kramer**

**This is not required if scalar is inbuilt in the item no. IX and X**

**VGA-HDMI Scaler:**

- # shall support video processing with the ability to scale RGB, signals to a common high resolution output.
- # Shall accept and output signals up to 1920x1200, including 1080p/60 and 2K.
- # The scaler should feature HDMI audio embedding
- # Scaler shall provide gain and attenuation adjustments at analog audio input.

**XXIV. Installations and integration for all Rooms as mentioned above.**

**Note :** All rooms will be connected to existing Polycom Group 700 as when required by IIT Palakkad, Hence Vendor should give the provision for connecting Audio and Video cables for all rooms.



**Part B**

**Wireless Chairman and Delegate unit**

**AKG/Bosch/Sennheiser**

**Location Conference room**

<b>Wireless Chairman unit - 1No.</b>	
<b>SLNo</b>	<b>Specification</b>
<b>1</b>	Interference-free and eavesdropping - proof transmission in the 2.4 GHz and 5 GHz frequency bands
<b>2</b>	128-bit AES encryption
<b>3</b>	Exchangeable Lithium-Ion battery pack for more than 20 hours operating time.
<b>4</b>	Screw-on microphone socket for connection of gooseneck microphone.
<b>5</b>	Broadband twin loudspeaker system.
<b>6</b>	Integrated DSP limiter.
<b>7</b>	3.5 mm headphone socket and headphone volume control.
<b>8</b>	Next key and Priority key for controlling delegate units.
<b>9</b>	Frequency range 2.4 / 5.1 to 5.9 GHz
<b>10</b>	Antennas built-in PCB antennas with pattern diversity
<b>11</b>	Coverage area 30 m (100 ft) to antenna module
<b>12</b>	Power supply via battery pack
<b>13</b>	Operating time > 20 h with battery pack
<b>14</b>	Audio quality 16 bit / 32 kHz
<b>15</b>	Headphone connection 3.5 mm stereo jack socket
<b>16</b>	Headphone output level 50 mW / 16 $\Omega$
<b>17</b>	THD (at 1 kHz)0.03 % at 50 mW / 16 $\Omega$
<b>18</b>	Loudspeaker frequency response 100Hz to 14.5 kHz
<b>19</b>	Signal-to-noise ratio> 70 dB(A)
<b>Wireless Delegate unit - 12 Nos.</b>	
<b>SLNo</b>	<b>Specification</b>

1	Interference-free and eavesdropping-proof transmission in the 2.4 GHz and 5 GHz frequency bands.
2	128-bit AES encryption.
3	Exchangeable Lithium-Ion battery pack for more than 20 hours operating time.
4	Screw-on microphone socket for connection of an gooseneck microphone.
5	Broadband twin loudspeaker system.
6	Integrated DSP limiter.
7	3.5 mm headphone socket and headphone volume control.
8	Frequency range 2.4 / 5.1 to 5.9 GHz
9	RF output power 25 to 100 mW
10	Antennas built-in PCB antennas with pattern diversity
11	Coverage area 30 m (100 ft) to antenna module
12	Power supply 7.4 VDC via battery pack
13	Operating time > 20 h with battery pack
14	Charging time of battery pack approx. 4 h
15	Audio quality 16 bit / 32 kHz
16	Headphone connection 3.5 mm stereo jack socket
17	Headphone output level 50 mW / 16 $\Omega$
18	THD (at 1 kHz)0.03 % at 50 mW / 16 $\Omega$
19	Loudspeaker frequency response 100Hz to 14.5 kHz
20	Signal-to-noise ratio> 70 dB(A)

**Controller Unit Wireless Module**

SLNo	Specification
1	Frequency range 2.4 / 5.1 to 5.9 GHz
2	RF output power 25 to 100 mW
3	Antennas 3 rod antennas (omni directional)
4	Coverage area: 30 m (100 ft) radius
5	Power supply: 12 to 15 VDC
6	Power consumption 6 W

**Controller Unit - 1 No.**

SLNo	Specification
1	Frequency response 100 - 14000 Hz
2	THD, total harmonic distortion < 0,01% A-weighted at +6 dBV IN, OUT
3	Signal-to-noise ratio > 80dB A-weighted at +11 dBu
4	Input voltage range -18 dBu to +18dBu (XLR IN)
5	Output voltage 52,
6	Output level max. +10dBV

7	Supplies up to 40 and controls up to 400 discussion units
8	USB Conference recording
9	Graphical user menu in multilanguages languages
10	Electronically balanced XLR In- and Output
11	Open Media Control Protocol over Ethernet
12	compatible to Crestron and/other brands
13	Permanent malfunction monitoring and error diagnostics
14	Low-noise fan for in-room use
15	Integrated PC with pre-installed control software.
	<b>Charging Unit - 1 No.</b>
<b>SLNo</b>	<b>Specification</b>
1	Simultaneously charges up to 10 battery packs
2	Charging time of approx. 4 hours
3	Status display with LEDs for monitoring the overall charging process
4	Test button for checking the charge status of an individual battery pack
5	Can be mounted in a 19" rack
	<b>MICROPHONE For Chairman and Delegate Unit</b>
SLNo	Specification
1	Detachable gooseneck microphones
2	Polar Pattern supercardioid capsule
3	High rejection of lateral sounds and background noise
4	Microphones support long speaking distances
5	SYSTEM Frequency response: 190 Hz to 14.5 kHz
6	Sensitivity (at 1 kHz): 38 mV/Pa
7	Maximum sound pressure level: 120 dB
8	Operating temperature range: 5 °C to 45 °C
9	Operating relative humidity: 20 to 80 %

**Note :** Polycom Group 700 audio should be integrated with Chairman and delegate unit for receiving/ transmitting far and near audio.

### **Terms and Conditions:**

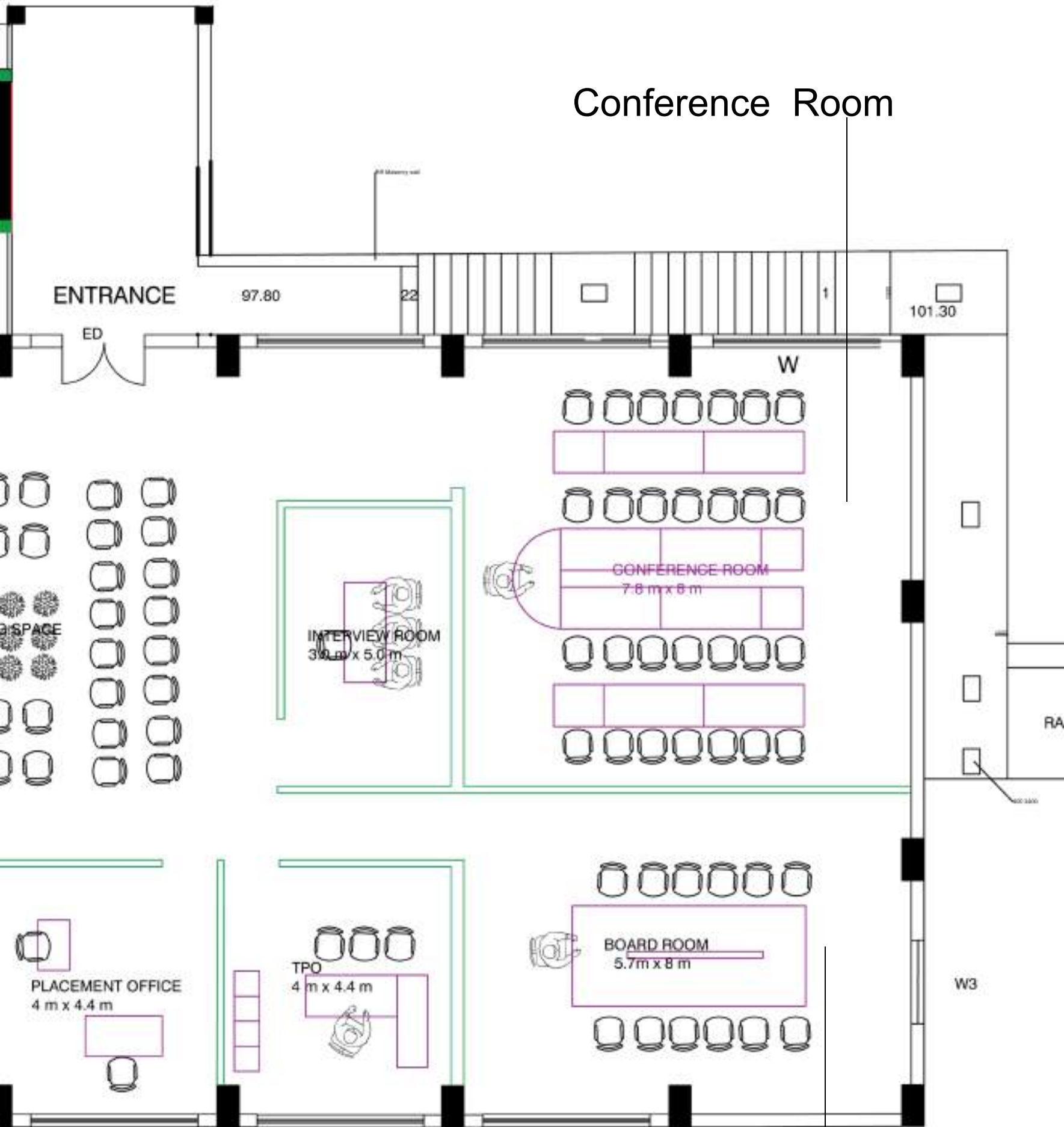
- ❖ All tools/ ladder for erection should be brought by the vendor/contractor.
- ❖ No damage should be done to the floor or walls for laying the cables,. Reversible changes are allowed.
- ❖ No cable should be exposed in moving space of the floor.
- ❖ All materials used should be of good quality.
- ❖ *All standard accessories to be supplied (Example Remote, Wall mount bracket for speakers/Display, Power cord etc.)*
- ❖ *Installation includes Electrical wiring with fire retardant cables and power points for equipment in all rooms. IIT Palakkad will only provide UPS power point , Vendor have to draw cables to the required equipment using casing / capping/ piping.*
- ❖ *3 Years onsite Warranty should be clearly mentioned (Proof has to be submitted at the time of installation).*
- ❖ *The product should match each and every specifications mentioned. The specification has to be mentioned clearly in the technical bid.*
- ❖ ***Compliance sheet for the specification & OEM Brochure has to be attached along with Technical bid. Vendor has to fill the compliance sheet and mention page number or reference number in OEM brochure. Unfilled / partial filled sheets lead to disqualification.***
- ❖ *Vendor has to highlight the specification in the OEM brochure.*
- ❖ *The entire work has to be completed within 4 weeks from the date of receipt of Supply/Work Order.*
- ❖ *Those who have done similar kind of installation (both audio & video integration) for Classroom/Boardroom will be preferred. Proof (Purchase Order/Performance Certificate) has to be attached.*
- ❖ *The bidder should have been in AV system integration with at least 3 Years Experience. Proof should be attached in the technical bid.*
- ❖ *Payment will be given after successful installation & configuration.*
- ❖ **Replacement or standby equipment should be installed within 24 hours after registration of faulty equipment during the warranty period.**
- ❖ Vendor should provide acceptance letter for above mentioned terms & conditions.

## Who can participate in the bid?

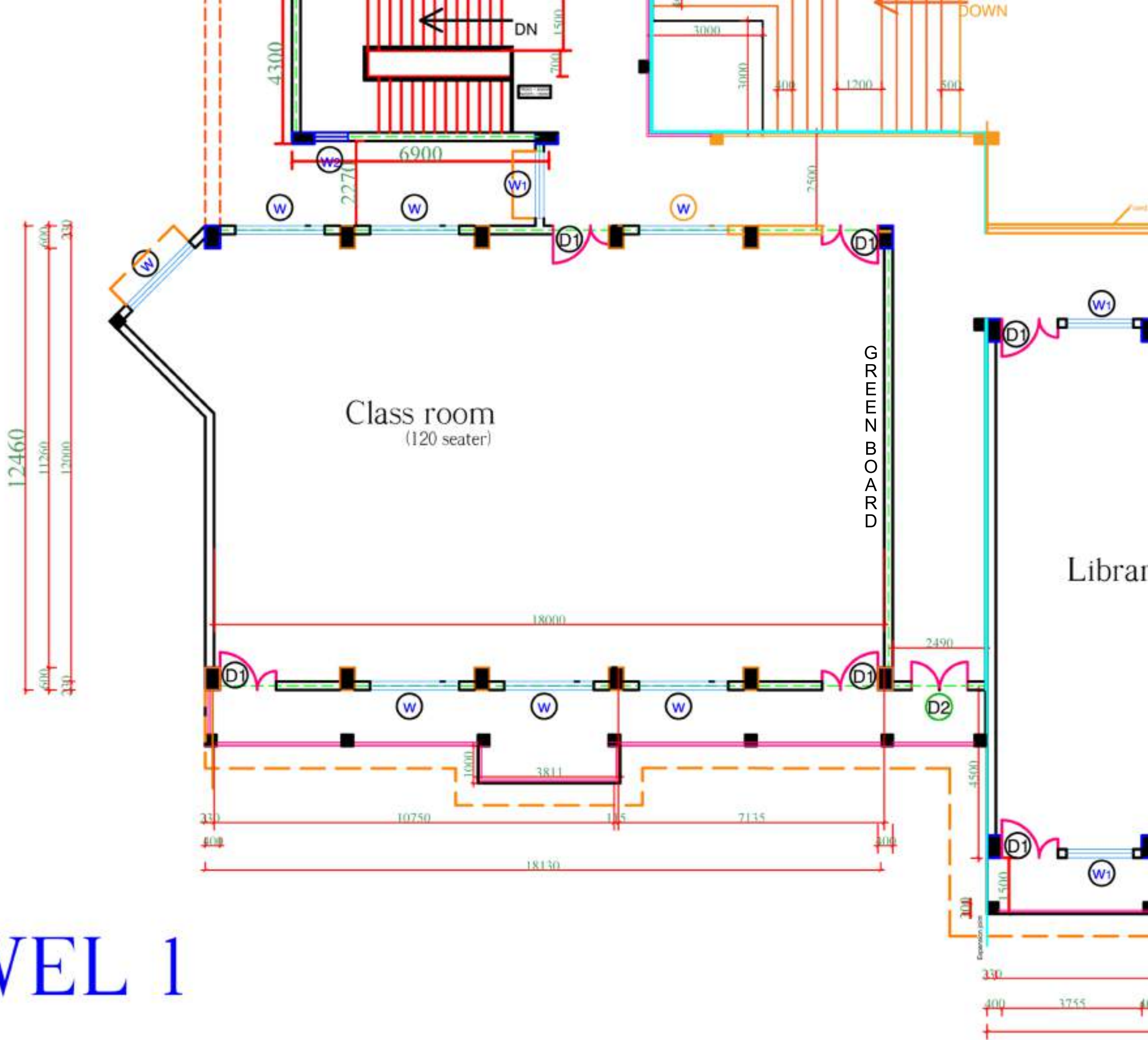
Only those bidders fulfilling the following criteria should respond to the tender.

1. The bidder should be either an Original Equipment Manufacturer (OEM) of AV Equipment or should be an authorized representative (provide documentary proof) of an OEM.
2. The bidder should be a company registered under the Companies Act, 1956/2013 OR a Limited Liability Partnership /a registered partnership firm OR a sole-proprietorship entity. Appropriate Registration incorporation certificate must be submitted.
3. The bidder must have a registered office in Karnataka/Tamil Nadu/Telangana/Andhra Pradesh/Maharashtra or Kerala. Certificate of registration for the offices to be provided.
4. The bidder must also have a service center in Karnataka/Tamil Nadu/ Telangana/Andhra Pradesh or Kerala. Certificate of registration for the centers to be provided. Details about scope of service activities provided by the service centres must be provided. The contact details of the service engineers must be provided.
5. The bidder must be in existence in the business of supplying AV Equipment for a minimum period of 5 previous financial years (before or since 01 April 2012). Documentary evidences of experience must be provided.
6. The bidder should have implemented orders of AV Equipment with accessories worth exceeding INR **50 Lakhs** during previous three financial years (01 April 2014 – 31 March 2017). Copies of the most recent purchase orders and certificates of successful implementation must be included. Copies of financial statements or evidence of turnover must be furnished.
7. The bidder should have documentary evidence of having supplied at least 1 No. of AV Equipment with accessories to a Centrally Funded Technical Institution (e.g., IIT, NIT, IISc, IISER, etc.) in the recent past. The bidder must provide a certificate of satisfactory performance of the supplied equipment from the institute to which they have recently supplied. Contact details of the faculty-in-charge of the installed setup must also be provided.
8. Compliance sheet for the technical specification and OEM Brochure have to be attached along with the Technical bid. Vendor has to fill the compliance sheet and mention page number or reference number in OEM brochure. Unfilled / partially filled sheets lead to disqualification.
9. The bidder must provide detailed specification of each equipment/item. Model numbers, data sheets and brochures must be included for all equipment quoted, system and all accessories. Specifications corresponding to quoted model number must be available publicly via OEM's website for scrutiny. If not, bid can be disqualified on technical grounds.
10. Service and warranty for a minimum period of three years for the equipment must be provided. AMC for additional three years must be quoted separately.
11. Bidder should provide performance certificate of any 3 AV installations work of high value which they have done in last three year.
12. The bidder should have experience in installation of IP based HD video conferencing. Proof has to be provided with Technical bid

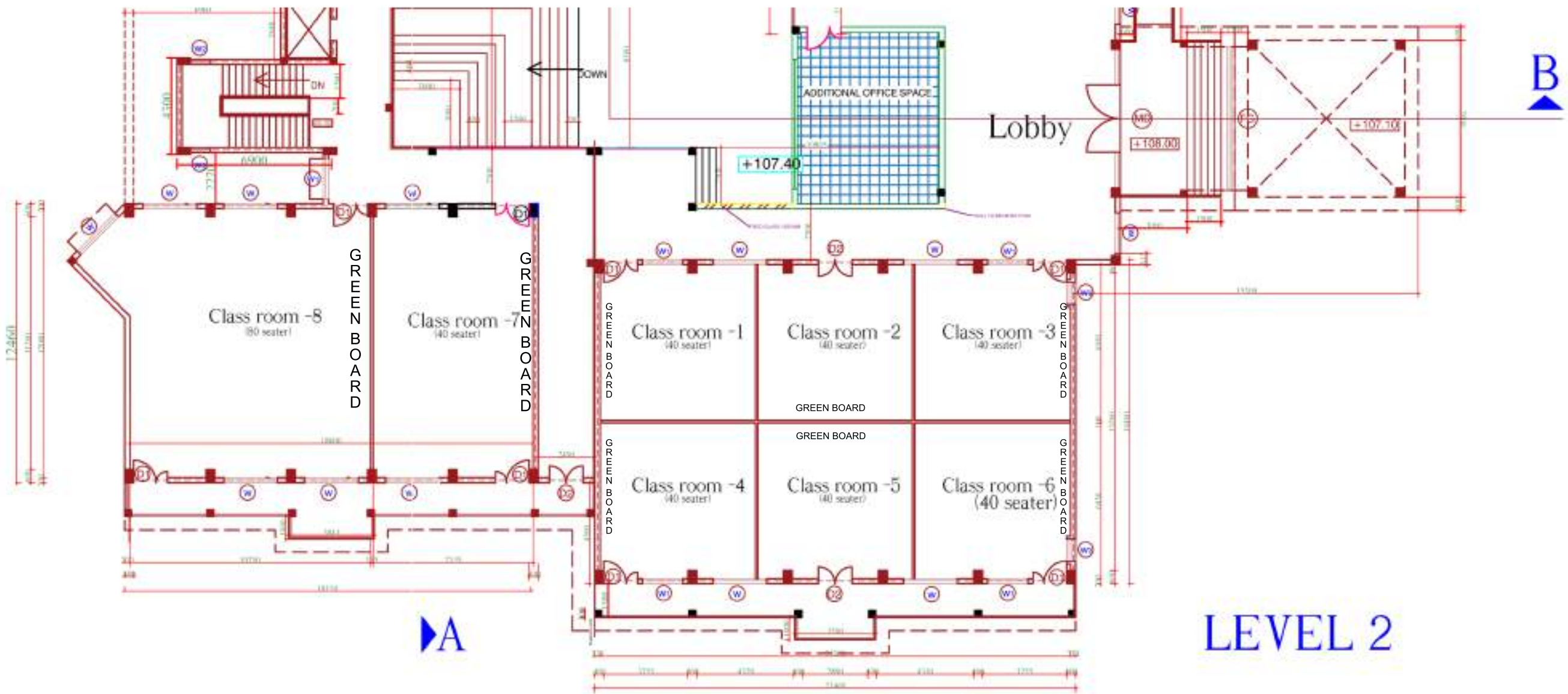
# Conference Room



# Board Room



LEVEL 1



LEVEL 2