



**INDIAN INSTITUTE OF SCIENCE EDUCATION AND  
RESEARCH THIRUVANANTHAPURAM [IISERTVM]**

PH.-0471 2778019,  
EMAIL: [purchasestores@iisertvm.ac.in](mailto:purchasestores@iisertvm.ac.in)

MARUTHAMALA.P.O VITHURA. P.O  
THIRUVANANTHAPURAM 695551,  
KERALA, INDIA  
GST No.32AAAJI0299R1ZS

Date: 22 Oct 2021

**CORRIGENDUM TO TENDER NO**

**No: IISER/PUR/0790/PYS/IT/21-22**

**Sub: Supply, Installation and commissioning of Audio-Visual System in  
200-250 seater lecture hall (2 Nos)**

**Ref: Tender Enquiry No. 2021\_IISRT\_651646\_1**

The following corrigendum are added to the above mentioned tender :-

- (a) Revised technical specifications mentioned in annexure I
- (b) drawing at annexure II .

Due date for submission of bids: 30 Oct 2021 (1500 Hrs)

Due date for opening of technical Bids: 01 Nov 2021 (1530 Hrs)

Thanking You,

Yours Faithfully

Sdxxx/-

Deputy Registrar (P&S)





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Annexure 1

Sno	Product	Description	Qty	Accepted Make
<b>Audio solution - 200 Seater Lecture Theatre</b>				
1	Main Pa	2-Way Bass Reflex Speaker, Coverage 90 x 60 ( equivalent or Better ), Woofer size : 8 inch or More, Tweeter size : 1" or More, Program power rating >= 300 watts , Sensitivity >= 91 dbspl ( 1w/1m on axis ), M10 provision on the speaker to suspend the speaker, Provision for vertical and horizontal mounting.	8nos	JBL , YAMAHA , BOSE
2	Amplifier	Class D, Balanced output circuit, DSP for Audio Processing, Equipped with balanced inputs, 400 watts @ 8 ohms , 800 watts @ 4 ohms Equivalent or Better, THD:0.1% or Better, Frequency 20Hz-20kHz, Preferred : Dante /AES 67 network protocol, 4 Independent Channel Amplification	3nos	CROWN, YAMAHA , BOSE

3	DSP	8 Mic\line input and output or more , Dante network audio, Acoustic echo canceller , Automatic gain control , Ambient Noise compensator , room combiner , EQ , feed back suppresser , filter, (If AFS is not avaiailable Standalone feed-back suppressor can be used) Dedicated Software for Total Sound System Design, RS-232C	1no.	BSS,YAMAHA, BOSE
4	Microphone lapel	<p><b>Receiver spec</b>          Automatic frequency setup 16 pre-programmed frequencies or better          Up to 14 hours battery life or more          Two-color display backlighting,          30.5 Mhz tuning range,          Audio Bandiwdth35 – 20, 000 Hz          Wideband FM</p> <p><b>Transmitter Spec</b>          Switching Bandwidth :30.5 Mhz,          Rf output 10 or 50 mW,          Audio bandwidth 35 – 20,000 Hz          Wideband FM head worn microphone spec          High performance Headworn microphone with cardioid polar pattern          Frequency range : 80 – 20,000 hz ,          Output type : mini xlr ,</p>	4nos	SHURE,AKG SENHEISER



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5	Wireless Handheld Microphone	<b>Receiver spec</b> Automatic frequency setup 16 pre-programmed frequencies Up to 14 hours battery life Two-color display backlighting 30.5 Mhz tuning range 6.3 dBV / -100 dBm sensitivity Audio Bandwidth 35 – 20,000 Hz Audio output : 1 x XLR sockets balanced Wideband FM	4nos	SHURE,AKG SENHEISER	
		<b>Handheld microphone spec</b> Dynamic super cardioid microphone Switching Bandwidth :30.5 Mhz Battery life 14 hours or better			
6	Podium Microphone	Polar pattern : cardioid Frequency range : 70 to 16000 khz Length : 50 cm off switch Heavy duty base	On /	1no.	SHURE,AKG SENHEISER

## Video Solution

7	Video switching and presentation device	<p>7x4 matrix Swicher ( or more inputs and outputs) control processor and presentation device <b>Signal type</b> : HDMI, HD Base T, component (YPbPr), S-Video (Y/C), composite (NTSC, PAL) <b>Output signal</b> : HDMI , HDBaseT Integrated control system 5 x 19-pin Type A HDMI female or more 2 x HDBaseT input 2 x HDMI output 2 X HDBaseT ouput 4 X relay control's 4 x IR serial out (if the manufactrer has more no. inputs and output than requested , they can quote for the equivalent model )</p>	1no.	AMX,CRESTRON, KRAMER
8	Hdmi Transmitter	<p>Minimim 3 I/P and 1 O/P Switch Required, Input signal HDMI, Output signal : HD BaseT and HDMI Audio format : Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, Dolby Atmos®, DTS®, DTS-ES, DTS 96/24, DTS High Res, DTS HD Master Audio™,LPCM up to 8 channels, 10/100 Mbps, auto-switching, 1/half duplex, DHCP, RS 232 , IR serial port ( goes under podium if the manufacturer does not have switcher and a transmitter a single device , standalone devices can also be used )</p>	1no.	AMX,CRESTRON, KRAMER



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9	Hdmi Receiver	Should be compactible with transmitter as specified in serial no 8 Output signal type HDMI Audio Format : Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, Dolby Atmos®, DTS®, DTS-ES, DTS 96/24, DTS- D High Res, DTS-HD Master Audio™, LPCM up to 8 channels, HDCP 2.2, 10/100 Mbps, auto-switching, , full/half duplex, DHCP RS 232 , IR serial port , HDBaseT output , HDMI output , Automatically scales the image to source spec	1no.	AMX,CRESTRON, KRAMER
10	User interface	Wi-Fi® capabilities and PoE+ 802.1X, TLS, FIPS-140-2, SSH, and SFTP Table top design 10.1 in. (257 mm) diagonal TFT active matrix color LCD CONTROL APP SHOULD BE INCLUDED(APPLE IPAD) , ( if ipad is quoted a high quality docking station should also be included )	1no.	CRESTRON, AMX, APPLE IPAD (docking station: iport or any brand which functions the same)

11	Projector	6500 or better lumens , 20,000 hours maintenance free light source, Laser Technology, WUXGA 1920 x 1200, Horizontal/Vertical keystone adjustments, 4-corner adjustment, Warping & Edge Blending, System Integration Control Protocols, Single chip or better(DLP® technology, LCD or any other equivalent technology, HD Base T 360° and portrait projection capability, 100 % rec 709 (Lens for short thorw should be included , distance can be suggested by the vendor based on the brand , preffred lens :short throw )	1nos	OPTOMA, PANASONIC, BENQ
12	Motorised Projector Screen	IR remote for controlling the screen, Built-in 5-12 volt trigger, RJ45 input port, 1.1 screen gain, Motorised dropdown screen, Aspect ratio 16 :10, Screen size 200 “ diagonol ( 170 “ x 106”)	2nos	Any Indian Make
13	Table top cable management	One touch door, Pass through lids, Retractable cable, HDMI x 2 no's, USB x 1, 16 AMP power socket x 1	1 no.	CRESTRON,KRAMER, LEGRAND





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14	Tracking camera	Auto Tracking camera for the presenter with 20x Optical Zoom, License for auto tracking should be included(if applicable), Supports RTSP/RTMP/RTMPS, HeVC(H.265)/H.264/MJPEG video compression, HDMI output, PTZ should be controlled via IP, Full HD 1080P, Support PoE	2 nos	LUMENS, AVER, PANASONIC
15	Podium Pc	Core I7 , RAM 16 GB 1TB storage ,with adeqate pcie slots	1no.	
16	video capture system/ Multi-windowing Processor	Full HD 1080P or Better, 4 HDMI Inputs and 1 HDMI output, Should support analog stereo audio, Scaling and window processing and should support PIP, PBP, should support RTSP streaming(if not should include the TX and RX for the HDMI IN and OUT of the tracking camera) Integrate with the control system	1no.	LUMENS, CRESTRON, KRAMER
17	Hdmi capture card	1080p@60hz capture , hardware encoder H.264,Pci interface , bitrate 60Mbps or more ,	1no.	ELGATO,MAGEWELL
18	Tablet	Interactive PEN display, 20 inches or more, Full HD resolution,2048 levels PEN with Stand	1no.	WACOM, XP-PEN
19	HDMI- SPLITTER	High performance HDMI Splitter, Control via ethernet, 4X2 Switching	1 no.	CRESTRON, AMX, KRAMER
20	CHARGER UNIT FOR HEADWORN MIC RECEIVER	Charging port for headworn microphone and handheld microphone(1 no under podium, 1 on rack)	2	SHURE,AKG SENHEISER

21	POE SWITCH	8Full giga bit switch ip-mac- portbinding , acl,port security , DHCP snooping ,l2,l3,l4qos, IGMP Snooping , 802AF, 802af-at	1no.	CISCO TPLINK, NETGEAR
<b>Installation and programming Charges</b>				
22	Cables and connectors	Cables and connectors as per BOQ,material cost,labour and Scaffolding charges to be included	1set	
23	Rack	32U Rack for the equipments	1 no.	
24	Podium: Customized wooden podium having provisions for fixing interactive touch panel with a display size of 22 inch or more, presentation on input points, provision for placing charger docks, gooseneck microphone, and provision for placing laptop	Table top which should accommodate 22" tablet and should have plenty of space for the user to adjust the height of the tablet, Should have provision to accomdate an laptop and cable cubby, Should have storage for charging port for lap microphone	1no.	
25	Installation charges	Installation of speakers hanging from truss purlin,Projector bracket mounting from truss purlin,Motorised Screen fixing with all material cost labour and scaffolding charges to include	1set	
26	Programing charges	Programing and Calibration Charges	1set	



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Sno	Product	Description	Qty	Accepted Make
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1	Main Pa	2-Way Bass Reflex Speaker, Coverage 90 x 60 ( equivalent or Better ), Woofer size : 8 inch or More, Tweeter size : 1" or More, Program power rating >= 300 watts , Sensitivity >= 91 dbspl ( 1w/1m on axis ), M10 provision on the speaker to suspend the speaker, Provision for vertical and horizontal mounting.	10nos	JBL , YAMAHA , BOSE
2	Amplifier	Class D, Balanced output circuit, DSP for Audio Processing, Equipped with balanced inputs, 500 watts @ 8 ohms , 800 watts @ 4 ohms Equivalent or Better, THD:0.1% or Better, Frequency 20Hz-20kHz, Preferred : Dante /AES 67 network protocol, 4 Independent Channel Amplification	3nos	CROWN, YAMAHA , BOSE
3	DSP	8 Mic\line input and output or more , Dante network audio, Acoustic echo canceller , Automatic gain control , Ambient Noise compensator , room combiner , EQ , feed back suppresser , filter, (If AFS is not available Standalone feed suppressor can be used) Dedicated Software for Total Sound System Design, RS-232C	1no.	BSS,YAMAHA, BOSE

4	Microphone lapel	<p><b>Receiver spec</b>  Automatic frequency setup 16 pre-programmed frequencies or better  Up to 14 hours battery life or more  Two-color display backlighting,  30.5 Mhz tuning range,  6.3 dBV / -100 dBm sensitivity  Audio Bandwidth 35 – 20,000 Hz  Wideband FM</p>	4nos	SHURE,AKG SENHEISER
		<p><b>Transmitter Spec</b>  Switching Bandwidth :30.5 Mhz,  Rf output 10 or 50 mW,  Audio bandwidth 35 – 20,000 Hz  Wideband FM head worn microphone spec  High performance Headworn microphone with cardioid polar pattern  Frequency range : 80 – 20,000 hz ,  Output type : mini xlr ,</p>		
5	Wireless Handheld Microphone	<p><b>Receiver spec</b>  Automatic frequency setup 16 pre-programmed frequencies  Up to 14 hours battery life  Two-color display backlighting  30.5 Mhz tuning range 6.3 dBV / -100 dBm  sensitivity Audio Bandwidth 35 – 20,000 Hz  Audio output : 1 x XLR sockets balanced  Wideband FM</p>	4nos	SHURE,AKG SENHEISER
		<p><b>Handheld microphone spec</b>  Dynamic super cardioid microphone  Switching Bandwidth :30.5 Mhz  Battery life 14 hours or better</p>		



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6	Podium Microphone	Polar pattern : cardioid Frequency range : 70 to 16000 khz Length : 50 cm off switch Heavy duty base	On /	1no.	SHURE,AKG SENHEISER
<b>Video Solution</b>					
7	Video switching and presentation device	7x4 matrix Swicher ( or more inputs and outputs) control processor and presentation device <b>Signal type</b> : HDMI, HD Base T, component (YPbPr), S-Video (Y/C), composite (NTSC, PAL) <b>Output signal</b> : HDMI , HDBaseT Integrated control system 5 x 19-pin Type A HDMI female or more 2 x HDBaseT input 2 x HDMI output 2 X HDBaseT ouput 4 X relay control's 4 x IR serial out (if the manufactrer has more no. inputs and output than requested , they can quote for the equivalent model )		1no.	AMX,CRESTRON, KRAMER

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10	User interface	<p>Wi-Fi® capabilities and PoE+ 802.1X, TLS,  FIPS-140-2, SSH, and SFTP  Table top design  10.1 in. (257 mm) diagonal  TFT active matrix color LCD  CONTROL APP SHOULD BE INCLUDED(APPLE IPAD) , ( if ipad is  quoted a high quality docking station should also be included )</p>	1no.	CRESTRON, AMX, APPLE IPAD (docking station: iport or any brand which functions the same)



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11	Projector	6500 or better lumens , 20,000 hours maintenance free light source, Laser Technology, WUXGA 1920 x 1200, Horizontal/Vertical keystone adjustments, 4-corner adjustment, Warping & Edge Blending, System Integration Control Protocols, Single chip or better(DLP® technology, LCD or any other equivalent technology) HD Base T 360° and portrait projection capability, 100 % rec 709 (Lens for short thorw should be included , distance can be suggested by the vendor based on the brand , preffred lens :short throw )	2nos	OPTOMA, PANASONIC, BENQ
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13	Table top cable management	One touch door, Pass through lids, Retractable cable, HDMI x 2 no's, USB x 1, 16 AMP power socket x 1	1 no.	CRESTRON,KRAMER, LEGRAND
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18	Tablet	Interactive PEN display, 20 inches or more, Full HD resolution,2048 levels PEN with Stand	1no.	WACOM, XP-PEN
19	HDMI- SPLITTER	High performance HDMI Splitter, Control via ethernet, 4X2 Switching	1 no.	CRESTRON, AMX, KRAMER
20	CHARGER UNIT FOR HEADWORN MIC RECEIVER	Charging port for headworn microphone and handheld microphone(1 no under podium, 1 on rack)	2	SHURE,AKG SENHEISER





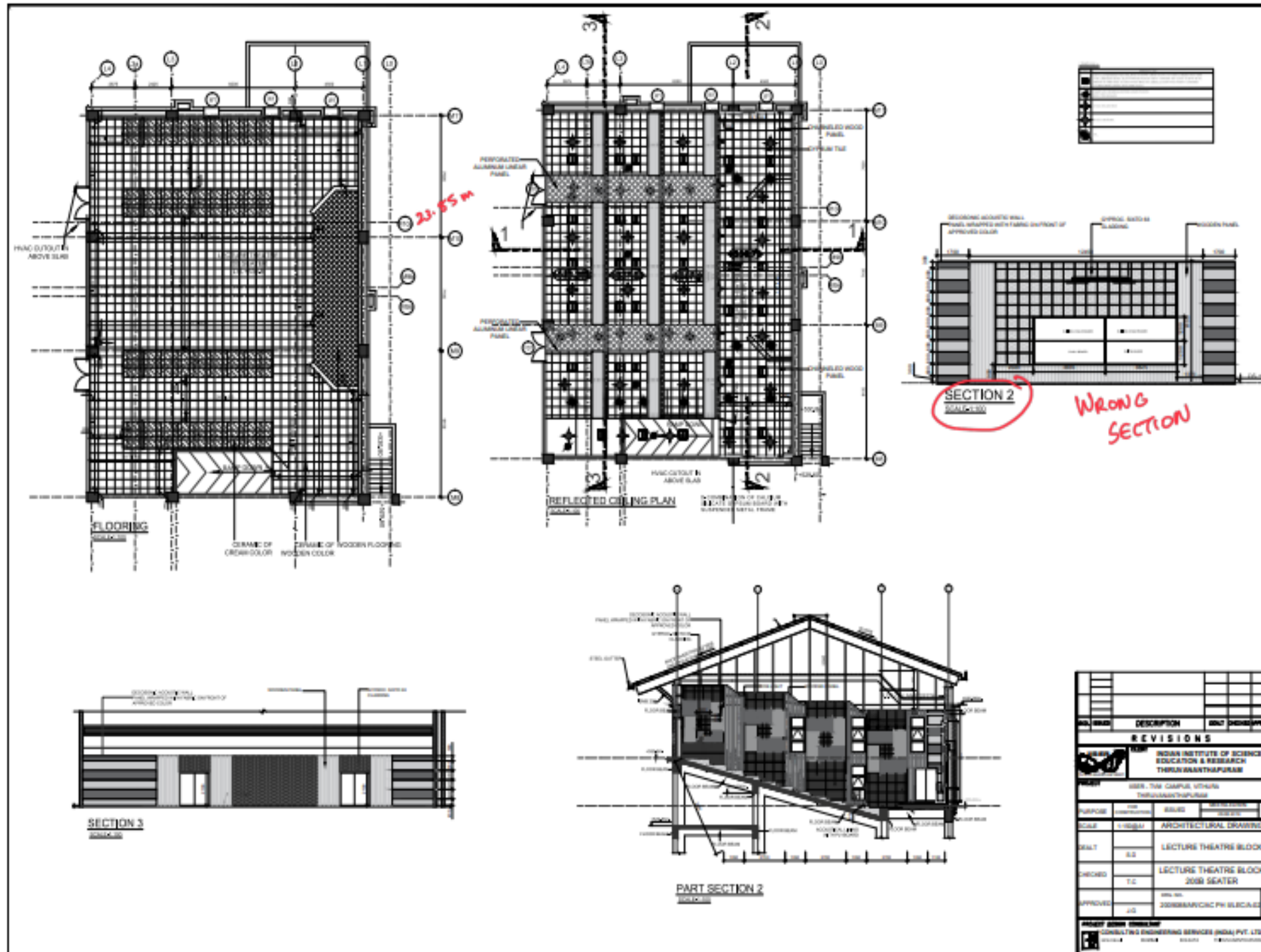
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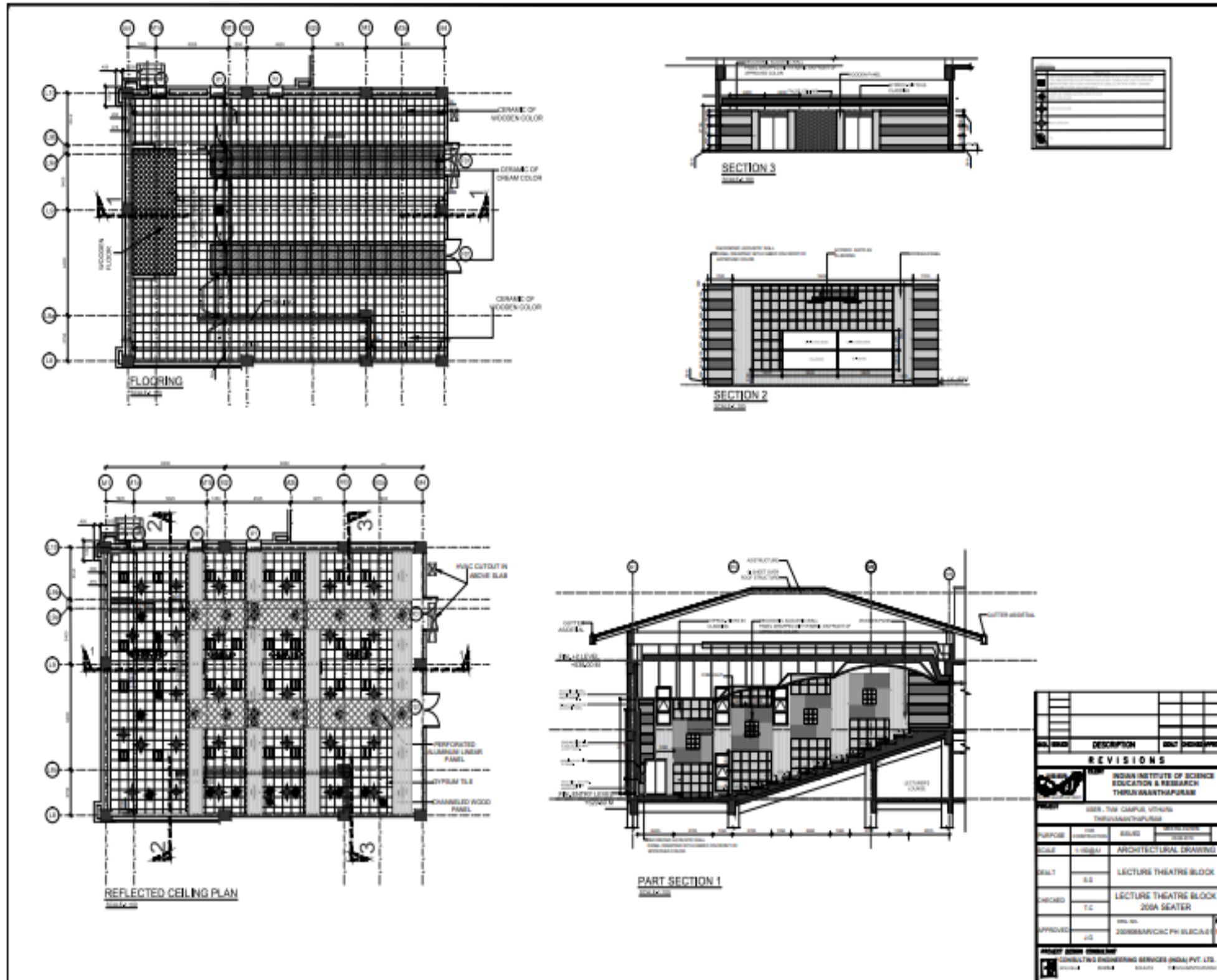
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21	POE SWITCH	8Full giga bit switch ip-mac- portbinding , acl,port security , DHCP snooping ,l2,l3,l4qos, IGMP Snooping , 802AF, 802af-at	1no.	CISCO TPLINK, NETGEAR
<b>Installation and programming Charges</b>				
22	Cables and connectors	Cables and connectors as per BOQ,material cost,labour and Scaffolding charges to be included	1set	
23	Rack	32U Rack for the equipments	1 no.	
24	Podium: Customized wooden podium having provisions for fixing interactive touch panel with a display size of 22 inch or more, presentation on input points, provision for placing charger docks, gooseneck microphone, and provision for placing laptop	Table top which should accommodate 22" tablet and should have plenty of space for the user to adjust the height of the tablet, Should have provision to accomdate an laptop and cable cubby, Should have storage for charging port for lap microphone	1no.	
25	Installation charges	Installation of speakers hanging from truss purlin,Projector bracket mounting from truss purlin,Motorised Screen fixing with all material cost labour and scaffolding charges to include	1set	
26	Programming charges	Programming and Calibration Charges	1set	

LAYOUT





NO.	DESCRIPTION	DATE	BY	CHECKED	APPROVED
<b>REVISIONS</b>					
<p><b>INDIAN INSTITUTE OF SCIENCE EDUCATION &amp; RESEARCH THIRUVANANTHAPURAM</b></p> <p><b>MR. M. MARUTHAMALA P. VITHURA</b></p>					
PURPOSE	DESIGN	SCALE	1:100	DATE	2023/08/01
SCALE	1:100	ARCHITECTURAL DRAWING			
BUILD	02	LECTURE THEATRE BLOCK			
PROJECT	T.C	LECTURE THEATRE BLOCK			
		200 SEATER			
APPROVED					
<p><b>PROJECT ENGINEER</b></p> <p><b>CONSULTING ENGINEERING SERVICES (INDIA) PVT. LTD.</b></p>					