



भारतीय प्रौद्योगिकीसंस्थानमद्रासचेनै 600 036
INDIAN INSTITUTE OF TECHNOLOGY MADRAS Chennai 600 036
भंडार एवं क्रय अनुभाग
STORES & PURCHASE SECTION
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G. Chitrapavai
Deputy Registrar (Stores & Purchase)

Dated :13.11.2019

Tender No. IITM/SPS/CEC/ VIDEO AND AUDIO SYSTEM IN CSE /012/2019-20

Due Date: 03.12.2019
Before 2.00p.m

Dear Sirs,

On behalf of the Indian Institute of Technology Madras, Tenders are invited for the purchase of

**“DESIGN, SUPPLY, INSTALLATION AND COMMISSIONING OF VIDEO AND AUDIO
SYSTEM IN CSE CONFERENCE ROOM – IIT MADRAS “**

confirming to the specifications enclosed.

Tender Documents may be downloaded from Central Public Procurement Portal <https://etenders.gov.in/eprocure/app> Aspiring Bidders who have not enrolled / registered in e-procurement should enroll / register before participating through the website <https://etenders.gov.in/eprocure/app>. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at “Help for contractors”. [Special Instructions to the Contractors/Bidders for the e-submission of the bids online through this eProcurement Portal”].

Tenderers can access tender documents on the website (For searching in the NIC site, kindly go to Tender Search option and type ‘IIT’. Thereafter, Click on “GO” button to view all IIT Madras tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website <https://etenders.gov.in/eprocure/app> as per the schedule attached.

No manual bids will be accepted. All quotation both Technical bid and Financial bid should be submitted in the E-procurement portal.

1	LAST DATE for receipt of Tender	: 03.12.2019 before 02.00 p.m.
	Date & Time of opening of Tender	: 04.12.2019 at 04.00 p.m.
	Pre bid meeting :	: 19.11.2019 at 04.00 pm Venue : Conference Room, 5th floor, Admin Building If you need more clarification on this tender document, you are invited to attend the pre bid meeting.
A	Submission of Tender	As per the directives of Department of Expenditure, this tender document has been published on the Central Public Procurement Portal URL: https://etenders.gov.in/eprocure/app The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal. More information useful for submitting online bids on the CPP Portal may be obtained at: https://etenders.gov.in/eprocure/app Both Technical Bid & Price Bid should be submitted separately in online CPP portal as per the specified format only. Right is reserved to ignore any tender which fails to comply with the above instructions. Manual submission of bid will not be entertained.

B	Instructions for online bid submission	<p>REGISTRATION</p> <ul style="list-style-type: none"> i. Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal URL:https://etenders.gov.in/eprocure/app by clicking on “Online Bidder Enrollment”. Enrollment on the CPP Portal is free of charge. ii. As part of the enrolment process, the bidders will be required to choose a unique user name and assign a password for their accounts. iii. Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal. iv. Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.) v. https://etenders.gov.in/eprocure/app?component=%24DirectLink&page=DSCInfo&service=direct&session=T with their profile. vi. Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse. vii. Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / eToken.
Guidelines, Terms and Conditions of Tender		
C	Searching for tender documents	<ul style="list-style-type: none"> i. There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP Portal. ii. Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective “My Tender” folder. This would enable the CPP Portal to intimate the bidders through SMS / email in case there is any corrigendum issued to the tender document. iii. The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.
D	Preparation of bids	<ul style="list-style-type: none"> i. Bidder should take into account any corrigendum published on the tender document before submitting their bids. ii. Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid. iii. Bidder, in advance, should prepare the bid documents to be submitted as indicated in the tender document / schedule and generally shall be in PDF / XLS formats as the case may be. Bid documents may be scanned with 100 dpi with black and white option. iv. To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, GSTIN Details, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use “My Documents” area available to them to upload such documents. These documents may be directly submitted from the “My Documents” area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process. v. All the technical related documents need to be uploaded in Technical bids for evaluation purpose.
E	Submission of bids	<ul style="list-style-type: none"> i. Bidder should log into the site well in advance for bid submission so that he/she upload the bid in time i.e. on or before the bid submission date and time. Bidder will be responsible for any delay due to other issues. ii. The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document. iii. Bidder has to transfer the EMD as applicable by online mode only. The EMD should be transferred on or before the closure date and time of the tender. If the EMD is not transferred before the closure date and time, the tender will be summarily rejected. The

		<p>EMD transferred to IIT Madras (as per IIT Madras Account details given in Clause I (i) and the proof of transfer has to be submitted in the technical bid. Otherwise, the tender will be summarily rejected.</p> <p>iv. A standard BOQ format has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the BOQ file, open it and complete the detail with their respective financial quotes and other details (such as name of the bidder). If the BOQ file is found to be modified by the bidder, the bid will be rejected.</p> <p>v. The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.</p> <p>vi. The Tender Inviting Authority (TIA) will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders due to local issues.</p> <p>vii. The uploaded tender documents become readable only after the tender opening by the authorized bid openers.</p> <p>viii. Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.</p> <p>ix. Kindly add scanned PDF of all relevant documents in a single PDF file of compliance sheet.</p>
F	Assistance to bidders	<p>i. Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.</p> <p>ii. Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk. The contact number for the helpdesk is [0120-4200462, 0120-4001002, 0120-4001005]</p>
G	General Instructions to the Bidders	<p>i. The tenders will be received online through portal https://etenders.gov.in/eprocure/app. In the Technical Bids, the bidders are required to upload all the documents in pdf format.</p> <p>ii. Possession of a Valid Class II/III Digital Signature Certificate (DSC) in the form of smart card/e-token in the company's name is a prerequisite for registration and participating in the bid submission activities through https://etenders.gov.in/eprocure/app</p> <p>iii. Digital Signature Certificates can be obtained from the authorized certifying agencies, details of which are available in the web site https://etenders.gov.in/eprocure/app under the "Information about DSC".</p>
H	Opening of the tender	<p>The online bid will be opened by a committee duly constituted for this purpose. Online bids (complete in all respect) received along with proof of transfer EMD (if any) will be opened as mentioned at "Annexure: Schedule". Bid received without EMD details (if present) will be rejected straight way. The technical bid will be opened online first and it will be examined by a technical committee (as per the eligibility criteria, specification and requirement). The financial offer/bid will be opened only for the offer/bid which technically meets all requirements as per the specification.</p>
I	Earnest Money Deposit (EMD)	<p>i. EMD for 90,000/- should be transferred to the following bank account on or before due date 03.12.2019 before 2.00p.m.</p> <p style="text-align: center;">Name : Registrar IIT Madras Bank : State Bank of India Account No : 10620824305 Branch : IIT MADRAS IFSC CODE : SBIN0001055</p> <p>ii. The EMD transferred to IIT Madras as per IIT Madras Account details given above and the proof of transfer has to be submitted in the technical bid. Otherwise, the tender will be summarily rejected.</p> <p>iii. Performance Guarantee for the values of Rs.1,35,000/- has to be submitted by way of DD/Bank Guarantee by the successful bidder only.</p> <p>iv. The EMD will be returned to unsuccessful tenderer only after the tenders are finalized. In case of successful tenderer, Performance Guarantee will be retained for a period of 60 days beyond the date of completion of warranty period.</p>

J	Marking on Technical Bid	<ul style="list-style-type: none"> i. The Scope of work for this tender is given in Annexure A. The detailed technical Specification along with bill of materials details and vendor eligibility criteria for this tender is given in Annexure A. The tenderer shall go through these details and submit the technical bid. ii. The Technical bid should be submitted in the proforma given as per Annexure B in pdf format only through online (e-tender). Manual submission of bid will not be entertained. iii. The Floor plan of CSE Conference room is given in Annexure C iv. All technical bid should have the page-wise heading as “Technical Bid” and page no. in all pages with seal and signature of authorized signatory. The total no. of pages should be mentioned at the last page of the documents. v. The technical bid should consist of all technical details along with catalogue/brochure, model number and other technical, commercial terms and conditions. The technical bid should contain only technical details called for in the prescribed proforma along with the supporting documents. No other details apart from the technical details should be submitted in the technical bid. If any deviation in this regard is found in the technical bid submitted, the tender will be summarily rejected.
K	Marking on Price Bid	<ul style="list-style-type: none"> vi. Price bid should be submitted in the prescribed proforma in BOQ in Excel format through e-tender only. Manual submission of bid will not be entertained. i. Price bid should indicate item-wise price <u>for all the items</u> mentioned in the technical bid. ii. Total value in the price bid should be indicated in figures & words clearly.
2	<p>VENDOR ELIGIBILITY CRITERIA</p> <p>1 The bidder should submit OEM authorization for all Make/brand of item for which they are submitting the bid.</p> <p>2. The bidder should have experiences in Govt. Institutions/any of Central PSU's / any of central Government/ autonomous bodies/reputed firms in executing the following works (any one category) in the last 3 financial year.</p> <ul style="list-style-type: none"> i) Two (2) similar contracts each costing not less than Rs. 20 Lakhs (Or) ii) One (1) similar contracts costing not less than Rs. 40 Lakhs <p>Copies of the documents listed below should be submitted as a proof for the above work experience:</p> <ul style="list-style-type: none"> a) Purchase Order b) Work Completion Certificates c) User Performance Certificate from End user. <p>3. The bidder shall have an annual financial turnover of not less than Rs. 4 Crores (Rupees Four Crores only) during the last three financial years i.e. 2015-16, 2016-17 and 2017-2018 (each year).</p>	
3	<p>Preparation of Tender:</p> <ul style="list-style-type: none"> a) You should quote your product as per our specification by mentioning our requirements and your offer side by side and the rate should be in total as per our requirements. We will not make any calculation if you have mentioned the rates of items separately. b) The offer/bids should be submitted through online only in two bid system i.e. Technical Bid and Price Bid separately. 	
4	<p>Signing of Tender:</p> <p>The Tender is liable to be rejected if complete information is not given therein or if the particulars and date (if any) asked for in the schedule to the Tender are not fully filled in or not duly signed/authenticated. Specific attention is drawn to the delivery dates and terms and conditions enclosed herewith. Each page of the technical bid required to be signed and bears the official seal of the tenderers.</p> <p>If the application is made by a firm in partnership, it shall be signed (with seal) by all the partners of the firm above their full typewritten names and current addresses or alternatively by a partner holding power of attorney for the firm in which case a certified copy of the power of attorney shall accompany the application. A certified copy of the partnership deed along with current addresses of all the partners of the firm shall also accompany the application.</p> <p>If a limited company or a corporation makes the application, it shall be signed by a duly authorized person holding power of attorney for signing the application, in which case a certified copy of the power of attorney shall accompany the application. Such limited company or corporation may be required to furnish satisfactory evidence of its existence. The applicant shall also furnish a copy of the Memorandum of Articles of association duly attested by a Public notary.</p>	
5	<p>Period for which the offer will remain open:</p> <ul style="list-style-type: none"> i. Firms tendering should note the period for which it is desired that their offers should remain open for acceptance. If the firms are unable to keep their offers open for the specified period they should specifically state the period for which their offers are being provided, however, the day up to which the offer is to remain open being declared closed holiday for the Indian Institute of Technology Madras, the offer shall remain open for acceptance till the next working day. 	

	<p>ii. Quotations qualified by such vague and indefinite expressions such as 'subject to immediate acceptance', 'subject to prior sale' will not be considered.</p> <p>iii. The Tender shall remain open for acceptance/validity till: 120 days from the date of opening of the tender</p>
6	<p>Prices:</p> <p>i. The prices quoted must be nett. per unit as per the technical specification mentioned in Annexure B and must include all Packing & Forwarding and other charges, etc.. The prices quoted by the Tenderer should be inclusive of GST and other statutory levies (and should be clearly stated to be so) which will be paid by the Purchaser/if legally leviable at the rate ruling on the date of supply as specified in the Acceptance of Tender. The percentage of tax etc. included in the price should be indicated in clear terms. If the inclusive price is not given, we will treat your offered rate as inclusive rate and comparison be made with others. If at the time of comparison of your offer without taxes etc. is happen to be lowest, you are bound to supply as per the offered rate, i.e. without taxes etc.</p> <p>ii. Concessional GST : IIT Madras is eligible for concessional GST @ 5% on IGST and @ 2.5% for CGST and SGST as per Notification No. 45/2017 – Central Tax (Rate) Dated 14th November 2017 & Notification No.47/2017 – Integrated Tax (Rate) Dated 14th November 2017, for procurement of Equipments and Consumables for research purpose. At the time of Invoicing, please state the concessional GST accordingly. During the supply of item, a certificate to this effect will be issued to your firm.</p> <p>iii. Concessional Customs Duty: IIT Madras is eligible for Concessional Customs Duty in accordance with the Notification No. 51/96 Customs dated 23.07.1996 and DSIR Registration No. TU/V/RG-CDE (21)/2016, dated 31.10.2018. Hence, you are requested to quote accordingly for this tender. Necessary Essentiality Certificate will be issued in this regard. The customs duty will be payable / reimbursable by us at the time of clearance on production of necessary proof.</p> <p>iv. Prices should be quoted in INR only.</p> <p>v. The rate quoted for indigenous purchase should be upto IIT Madras (cost should include item cost, packing, freight and delivery charges) and for imports, the quote should be for CIP Chennai.</p> <p>vi. Discount percentage for bulk purchases should be mentioned specifically in the technical bid. Any purchase of 5 units and above will be considered as bulk purchase.</p>
7.	<p>Evaluation of Bid and Award of Contract:</p> <p>Bid I: Technical Bid The online technical bid will be opened first and the Vendor Eligibility Criteria and technical bid will be evaluated as per ANNEXURE – B. The price bid of the vendor who have complied all points as per the technical bid alone will be considered for price bid opening.</p> <p>Bid II: Price Bid The tender will be awarded to the overall L1 bidder for the total work (Comprising all items).</p>
8.	<p>Payment: No Advance Payment will be made for indigenous purchase. Payment will be made only after supply and satisfactory installation/Commissioning.</p>
9.	<p>Terms and conditions : Failure to comply with any of the instructions stated in this document or offering unsatisfactory explanations for non-compliance will likely to lead to rejection of offers.</p>
10.	<p>Right of Acceptance: IIT MADRAS reserves the right to reject the whole or any part of the Tender without assigning any reason or to accept them in part or full.</p>
11.	<p>Communication of Acceptance: Acceptance by the Purchaser will be communicated by Post, if required, and the Company's acceptance communicated to us formally in writing.</p>
12.	<p>Warranty: Warranty should be 3 year.</p>
13.	<p>Delivery: The items should be delivered to Departments / Sections / Centers of IITM, Chennai-36 as indicated in the Purchase Order</p> <p>Delivery Period: The Items should be delivered within 4-6 weeks of issue of Purchase Order. Please indicate the actual delivery period clearly. No further extension of time will be allowed.</p>
14.	<p>Transit Insurance: The Purchaser will not pay separately for Transit Insurance.</p>
15.	<p>In terms of Rule 173 (iv) of General Financial Rules, 2017 the bidder shall be at liberty to question the bidding conditions, bidding process and/or rejection of its bid.</p>
16.	<p>Conditions of contract: Tenderer should quote on the basis of the conditions referred to in Para of the invitation to tender and tender papers. In case these terms and conditions are not acceptable to the tenderer, he should specifically state the deviation(s) there from in the body of the tender.</p>
17.	<p>Tenderer shall submit along with this Tender: Name and full address of the Banker and their swift code and PAN No. and GSTIN number.</p>
18.	<p>Guarantee:</p>

	The tenderer has to declare that the goods sold to the buyer under this contract shall be of the best quality and workmanship and shall be strictly in accordance with the specifications. Tenderer should indicate the period for which the said goods/articles would continue to conform to the specifications.
19.	Jurisdiction: All questions, disputes, or differences arising under, out of or in connection with the contract, if concluded, shall be subject to the exclusive jurisdiction at the place from which the acceptance of Tender is issued.
20.	Force Majeure: The Supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, it's delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure. <ul style="list-style-type: none"> ● For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes. ● If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.
21.	Risk Purchase Clause: In 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 the other source on the total risk of the supplier under risk purchase clause
22.	For Technical Related Queries Contact : Mr. C.R.Jeevandoss Instrumentation Engr. IIT Madras Chennai – 600 036. Phone No: 044- 2257 4947

ACKNOWLEDGEMENT

It is hereby acknowledged that I/We have gone through all the points listed under “Specification, Guidelines, Terms and Conditions” of tender document. I/We totally understand the terms and conditions and agree to abide by the same.

**SIGNATURE OF TENDERER ALONG WITH
SEAL OF THE COMPANY WITH DATE**

Annexure – A

DESIGN, SUPPLY, INSTALLATION AND COMMISSIONING OF VIDEO AND AUDIO SYSTEM IN CSE CONFERENCE ROOM

(A) SCOPE OF WORK

1. The tender is called for design, supply, installation and commissioning of video and audio system in CSE Conference Hall.
2. The bidder is required to design the video and audio system for the CSE Conference Hall.
3. The bidder should be an authorized dealer of the OEM.
4. The floor plan of the CSE conference hall is given in **Annexure – C**.
5. The desired brand of materials required to be used by the successful bidder with quantity in the proposed audio, video system is given in the list of Bill of Materials. The vendor should not alter the Quantity mentioned in the BOM.
6. The bidder should use the Quantity mentioned in the Bill of Material for designing and should choose any of one of the mentioned brand/make of items as per BOM. Any deviation in choosing the approved make/ brand will not be accepted.
7. Any other brand other than what mentioned in BOM will not be accepted.
8. The audio and video system should be designed with acoustics and the whole system should be fine-tuned for excellent output.

(B) VENDOR ELIGIBILITY CRITERIA

- 1) The bidder should submit OEM authorization for all Make/brand of item for which they are submitting the bid.
- 2) The bidder should have experiences in Govt. Institutions/any of Central PSU's / any of central Government/ autonomous bodies/reputed firms in executing the following works (any one category) in the last 3 financial years.
 - i) Two (2) similar contracts each costing not less than Rs. 20 Lakhs
 - (Or)
 - ii) One (1) similar contracts costing not less than Rs. 40 Lakhs

Copies of the documents listed below should be submitted as a proof for the above work experience:

- a) Purchase Order
 - b) Work Completion Certificates
 - c) User Performance Certificate from End user.
- 3) The bidder shall have an annual financial turnover of not less than Rs. 4 Crores (Rupees Four Crores only) during the last three financial years i.e. 2015-16, 2016-17 and 2017-2018 (each year).

(C) BILL OF MATERIAL

Sl. No.	Description	Approved Make	UoM	Qty
1.00	Video System			
1.01	Projector	Barco, Christie, Panasonic, Soni, Epson, Cisco	No.	1
1.02	Projector mount	Btech, Chief, Premiermounts, Soni, Epson, Cisco	No.	1
1.03	Projection screen	Dalite, Draper, Stewart	No.	1
1.04	Professional display	Christie, NEC, Panasonic	Nos.	2
1.05	Wall mount bracket	Btech, Chief, Premier mounts	Nos.	2
1.06	Active wall plate	AMX, Kramer,Lightware	No.	1
1.07	Presentation Switcher	AMX, Kramer,Lightware	No.	1
1.08	Distribution Amplifier	AMX, Kramer,Lightware	No.	1
1.09	HD Base T twisted pair transmitter	AMX, Kramer,Lightware	Nos.	4
1.10	HD Base T twisted pair receiver	AMX, Kramer,Lightware	Nos.	5
1.11	Tablet Monitor	Elmo, Wacom, Xp-PEN	No.	1
1.12	PC with dual HDMI	Dell, HP, Lenovo,Apple	No.	1
1.13	Podium	Custom	No.	1
1.14	VGA Audio Interface Cable	AMX, canare,Kramer	No.	1
1.15	HDMI Interface Cable	AMX, canare,Kramer	Nos.	13
1.16	Control Processor	AMX, Kramer	No.	1

Sl. No.	Description	Approved Make	UoM	Qty
1.17	I Pad 2017 - 32GB with Docking and Charging Station	Apple, Launch Port, MS surface pro	No.	1
1.18	Wireless access point	Asus, Dlink, Linksys	No.	1
1.19	Ethernet Switch	Cisco, Dlink, Netgear	No.	1
2.00	Audio System			
2.01	Gooseneck microphone system with Shock mount	Beyerdynamic, Sennheiser, Shure, AKG	Nos.	2
2.02	wireless handheld Microphone Set	Beyerdynamic, Sennheiser, Shure,AKG	Nos.	4
2.03	Wireless Lapel Microphone Set	Beyerdynamic, Sennheiser, Shure,AKG	No.	1
2.04	Antenna splitter	Beyerdynamic, Sennheiser, Shure,AKG	Nos.	2
2.05	Antenna Amplifier	Beyerdynamic, Sennheiser, Shure,AKG	Nos.	2
2.06	Antenna with Mounting Bracket	Beyerdynamic, Sennheiser, Shure,AKG	Nos.	2
2.07	Antenna cable	Beyerdynamic, Sennheiser, Shure,AKG	No.	1
2.08	loud Speaker system with ceiling mount	Bose, JBL, Martin Audio, QSC,RCF,	Nos.	4
2.09	Audio DSP	Polycom, QSC, Symetrix,RCF	No.	1
3.00	Cables and accessories			
3.01	Branded bulk cables, connectors and accessories.	MK, Neutrik	Lot	1
3.02	Microphone bulk cable	Belden, Canare, Kramer	Meter	48
3.03	Shielded Cat6 cable	Crestron, Dlink,Kramer	Meter	200
3.04	Audio/ Serial control cable	Belden, Canare,Kramer	Meter	210
3.05	Floor Box with accessories	Legrand, MK	Nos.	2
3.06	Equipment Rack	APW, Rittal, WQ	Nos.	1
3.07	Design, Installation, Cabling, Termination and Coordination and Project Management	Integrator	Lot	1

(D) DETAILED TECHNICAL SPECIFICATIONS

1.00 Video System

1.01 Projector

Item Reference	1.01
Item Description	Projector
Approved Make/Brand	Barco, Christie, Panasonic, Sony, Epson, Cisco
Minimum Performance Parameters.	
Native Resolution	WUXGA (1920x 1200)
Brightness	Min 10,000 lumens
Light Source	Laser
Lamp Life	Min 20000 hours
Aspect Ratio	16:10
Contrast	Min 10000 :1
Display method	3- LCD/DLP projection system
Screen Size	127 – 508 cm
Center to corner Uniformity	Min 90%
Vertical optical axis shift	+ 50%, -16%
Horizontal Optical axis shift	+30%, -10%
Vertical Keystone Correction	+/- 40°
Horizontal Keystone Correction	+/-15°
Inputs	Min 1 HDMI, 1 DVI-D , 1 VGA, 1 SDI
Control / Monitoring	RS 232

1.02 Projector Mount

Item Reference	1.02
Item Description	Projector Mount
Approved Make/Brand	Btech, Chief, Premier mounts, Soni, Epson, Cisco
Minimum Performance Parameters.	
Length	2.5 m Pole length
Load capacity	Min 25 kg
Swivel	360°
Tilt Adjustment	+/-13°
Roll Adjustment	+/- 6°

1.03. Projection Screen

Item Reference	1.03
Item Description	Projection Screen
Approved Make/Brand	Dalite, Draper, Stewart
Minimum Performance Parameters.	
Screen Diagonal	Min 419 cm
Surface	Matt White
Control	In built Low Voltage Control
Aspect	16:10

1.04. Professional Display

Item Reference	1.04
Item Description	Professional Display
Approved Make/Brand	Christie, NEC, Panasonic
Minimum Performance Parameters.	
Screen Size (Diagonal)	Min 165 cm
Panel Resolution	Min 3840 x 2160
Aspect Ratio	16:09
Brightness	Min 500 Cd /m2
Viewing angle (H/V)	Min 178 degree
HDMI IN	Min 3 HDMI (HDMI 1.4 x 2, Hdmi 2.0 x1)
VGA IN	Min 1 VGA
USB IN	Min 3 (USB 3.0 x 2, USB 2.0 x1)
Control Port	Min 1 RS 232
Display port	DP x 1
HDMI Out	Min 1

1.05. Wall Mount bracket

Item Reference	1.05
Item Description	Wall Mount Bracket
Approved Make/Brand	Btech, Chief, Premier mounts
Minimum Performance Parameters.	
Display Screen Mounting Size	Min 165 cm
Tilting	+/-15°
Mount	Swivel Mount
Load Capacity	Minimum 40kgs
Swivel	130°
Extension	40 – 469mm

1.06. Active Wall Plate

Item Reference	1.06
Item Description	Active Wall Plate
Approved Make/Brand	AMX, Kramer, Lightware
Minimum Performance Parameters.	
Distance Support	Up to 100 Meters
Switching	Auto Switching
EDID & HDCP	Should Supports EDID and HDCP transmission
Input	Min 1 HDMI and 1 VGA with audio 3.5mm Mini Jack
Output	Min 1 HDBase T on RJ-45 Connector.
Resolution	4K@60Hz (4:2:0) or higher and WUXGA
Data rate	10.2 Gbps or higher
Audio Embedding	Switcher should support audio embedding feature
Mounting Type	Wall mount Plate
Wall Plate	2 Gang Style wall plate
Environmental Regulation	ROHS, WEEE

1.07. Presentation Switcher

Item Reference	1.07
Item Description	Presentation Switcher
Approved Make/Brand	AMX, Kramer,Lightware
Minimum Performance Parameters.	
Input	Min 4 HDMI, 2 VGA.
Output	Min 1 HDMI, Min 1 RJ-45
Distance support	Up to 70m
Control Ports	RS232
HDCP	HDCP Compliant
Switching	Auto Switching
Max Output Resolution	1920 x 1080P 60Hz
Network Interface controller	Min 1 LAN

1.08. Distribution Amplifier

Item Reference	1.08
Item Description	Distribution Amplifier
Approved Make/Brand	AMX, Kramer,Lightware
Minimum Performance Parameters.	
Input	Min 1 HDMI
Output	Min 4 HDMI
HDCP	HDCP Compliant
Max Data Rate	6.75Gbps
EDID	EDID Pass Through

1.09. HD Base T Twisted Pair Transmitter

Item Reference	1.09
Item Description	HD Base T Twisted Pair Transmitter
Approved Make/Brand	AMX, Kramer,Lightware
Minimum Performance Parameters.	
Distance Support	Distance support should be up to 40m
Video Resolution	4K at 60 Hz (4:2:0) 24 bpp or higher
EDID and HDCP	Supports EDID and HDCP Compliant
Input	Min 1 HDMI
Output	Min 1 RJ 45
Data Rate	Min 10.2 Gbps
Chroma Sampling	4:02:00
Control	Min 1 Bidirectional RS232

1.10. HD Base T Twisted Pair Receiver

Item Reference	1.10
Item Description	HD Base T Twisted Pair Receiver
Approved Make/Brand	AMX, Kramer,Lightware
Minimum Performance Parameters.	
Distance Support	Distance support should be up to 40m
Video Resolution	up to 4K at 60 Hz (4:2:0) 24 bpp
EDID and HDCP	Supports EDID and HDCP Compliant
Input	Min 1 RJ 45
Output	Min 1 HDMI
Data Rate	Min 10.2 Gbps
Chroma Sampling	4:02:00
Control	Min 1 Bidirectional RS232

1.11. Tablet Monitor

Item Reference	1.11
Item Description	Tablet Monitor
Approved Make/Brand	Elmo, Wacom, Xp-PEN
Minimum Performance Parameters.	
Size	Min 39 cm Diagonal
Resolution	1920 x 1080 Pixels
Aspect Ratio	16:09
Brightness	Min 200 cd/m ²
Contrast Ratio	Min 800:1
Response time	30 ms
Viewing angle	170° / 170°
Reading technology	Electromagnetic Resonance
Pen Pressure Levels	1024
Pen report rate	Min 197 points per second
Pen tether	Yes
Coordinate Accuracy	+/- 0.5mm (Center)
System requirement	Windows 10/8.1/8/7 (32-bit, 64-bit), Mac OS 10.9 and later
Input	1 HDMI
Mounting	Flat Adjustable Mounting stand with inclination of 15°

1.12. PC with Dual HDMI

Item Reference	1.12
Item Description	PC with Dual HDMI
Approved Make/Brand	Dell, HP, Lenovo, Apple
Minimum performance parameters	
Processor	I5 or higher (I7)
Memory	Min 500 GB
Ram	Min 4 GB
Monitor output	Dual HDMI
USB Port	Min 1 USB 3.0, 1 USB 2.0
MS Office	In built
Keyboard and Mouse	Wireless
Antivirus	In built

1.13. Podium

Item Reference	1.13
Item Description	Podium
Approved Make/Brand	Custom
Minimum Performance Parameters.	
Front Size	120 cm H x 50cm W x 45 cm D
Presenter Side	115 cm H
Provision	Should have sufficient face to mount Mic, Tablet monitor, PC Provision has to be provided.

1.14. VGA Audio Interface Cable

Item Reference	1.14
Item Description	VGA with Audio Cable
Approved Make/Brand	AMX, canare,Kramer
Minimum performance parameters	
Length	180 cm
Connector	Terminated with high quality molded VGA connectors and 3.5 mm connectors for audio

1.15. HDMI Interface Cable

Item Reference	1.15
Item Description	HDMI Interface Cable
Approved Make/Brand	AMX, canare,Kramer
Minimum performance parameters	
Length	180 cm
Resolution	4K@60Hz (4:4:4) or higher, Deep Color, CEC,Dolby TrueHD,DTS-HD,Lip Sync.

1.16. Control Processor

Item Reference	1.16
Item Description	Control Processor
Approved Make/Brand	AMX, Kramer
Minimum performance parameters	
Bi Directional Ports	8 RS-232, 8 GPI/O, 1 Ethernet, 1 Micro-USB.
Inputs	1 Built in IR
Outputs	8 IR Out and 8 Relays.
Processor Speed	1 GHz
Memory	512 MB RAM,4 GB Flash

1.17. I Pad 2017 - 32GB with Docking and Charging Station

Item Reference	1.17
Item Description	I PAD with Docking and Charging Station
Approved Make/Brand	Apple, Launch Port, MS surface pro
Minimum performance parameters	
Display	Min 24 cm (diagonal) IPS LED-backlit Multi-Touch Retina display
Resolution	2048x1536
Processor Chip	A10
Memory	Min 32 GB
Mounting Enclosure	Enclosure & Stand for I Pad
Mount & Charger	Magnetic table mount and inductive charger

1.18. Wireless access point

Item Reference	1.18
Item Description	Wireless Access Point
Approved Make/Brand	Asus, Dlink, Linksys
Minimum performance parameters	
Network Standard	IEEE 802.11n, IEEE 802.11g, IEEE 802.11b, IEEE 802.11a
Antenna	4
Security Features	WEP,WPA,WPA2
Operating Frequency	2.4 GHz& 5 GHz
Ethernet port	4 x 10/100

1.19. Ethernet Switch

Item Reference	1.19
Item Description	Ethernet Switch
Approved Make/Brand	Cisco, Dlink, Netgear
Minimum performance parameters	
Switching Capacity	40 Gbps
Port Standards	IEEE 802.3 10BASE-T, IEEE802.3u 100BASE-TX, IEEE 802.3ab 1000BASE-T
Quality of Service	Priority queues, Queue Handling Strict, Weighted round robin, Bandwidth control, IPV6 Traffic class.
Ports	8 Port Gigabit Ethernet
POE Ports	Min 8 Port
Flash	16 MB
CPU Memory	128 MB
MAC Table	Upto 16K MAC addresses
Jumbo frames	Frame sizes up to 9K bytes supported on 10/100 and Gigabit interfaces
Dual Stack	IPv4 and IPv6

2.00 Audio System

2.01 Gooseneck Microphone system with Shock mount

Item Reference	2.01
Item Description	Gooseneck Microphone system with Shock mount
Approved Make/Brand	Beyerdynamic, Sennheiser, Shure, AKG
Minimum Performance Parameters	
Frequency Response	50 – 19000 Hz
Nominal Impedance	< 200 Ohms
Type	3 pin XLR Male
Goose length	Min 50 cm
Polar Pattern	Cardioid
Mute or On/Off Switch	Needed
Mount	Shock Resistance Mount
Signal to noise ratio	69 dB
Max SPL	107 dB
Phantom Power	12 – 48V
Operating Principle	Pressure Gradient
Lid Cover	Removable mounted in shock mount
LED Ring	Needed

2.02. Wireless Handheld Microphone Set

Item Reference	2.02
Item Description	wireless Handheld Microphone Set
Approved Make/Brand	Beyerdynamic, Sennheiser, Shure, AKG
Minimum Performance Parameters.	
Audio Frequency Response	45 – 15 kHz
Audio Dynamic Range	106dB
Polar Pattern	Cardioid
Gain Switch	2 Stage
Display	LCD
Transmitter and Receiver	518-548 Mhz, 606-636 Mhz, 794-832Mhz, 1785-1805Mhz
Range	Min 120 m

2.03. Wireless Lapel Microphone Set

Item Reference	2.03
Item Description	Wireless Lapel Microphone Set
Approved Make/Brand	Beyerdynamic, Sennheiser, Shure, AKG
Minimum Performance Parameters.	
Audio Frequency Response	20 – 20000 Hz
Polar Pattern	Omni directional
Transducer type	Condenser
Display	LCD
Transmitter and Receiver	518-548 MHz, 606-636 MHz, 794-832 MHz, 1785-1805 MHz
Range	Min 120 m

2.04. Antenna splitter

Item Reference	2.04
Item Description	Antenna Splitter
Approved Make/Brand	Beyerdynamic, Sennheiser, Shure, AKG
Minimum Performance Parameters.	
Frequency Response	470 - 832 MHz
Connectors	Input / Output BNC socket
Antenna	6 way wideband antenna
Antenna supply	Min 8 V DC, 200mA per Input

2.05. Antenna Amplifier

Item Reference	2.05
Item Description	Antenna Amplifier
Approved Make/Brand	Beyerdynamic, Sennheiser, Shure, AKG
Minimum Performance Parameters.	
Frequency Response	470 to 1000 MHz
RF Connection	Input / Output BNC Socket
Wave Impedance	50 Ohms
Amplification Switchable	3 stages 5dB, +10dB, +15 dB
Supply via antenna cable	8 – 9 V DC, 75mA

2.06. Antenna with Mounting Bracket

Item Reference	2.06
Item Description	Antenna with Mounting Bracket
Approved Make/Brand	Beyerdynamic, Sennheiser, Shure, AKG
Minimum Performance Parameters.	
Frequency Range	470 to 790 MHz
Antenna	Passive transmitting and receiving
Antenna Gain	2, 5 dBi
Antenna Polar Pattern	Omnidirectional
Voltage Standing Wave Ratio	< 2 (rel. to 50 Ohms)
Mounting	Wall Mount or Ceiling Mount & 360° Horizontal Vertical Adjustable.
Bracket	

2.07. Antenna Cable

Item Reference	2.07
Item Description	Antenna Cable
Approved Make/Brand	Beyerdynamic, Sennheiser, Shure, AKG
Minimum Performance Parameters.	
Cable	2.4 GHz
Bend Radius	25mm
Features	Should be from same OEM of the microphone

2.08. Loud Speaker System with Ceiling Mount

Item Reference	2.08
Item Description	Loud Speaker System with Ceiling Mount
Approved Make/Brand	Bose, JBL, Martin Audio, QSC, RCF,
Minimum performance parameters	
Frequency Range (-10dB)	50 Hz – 20 kHz
Frequency Response(-6dB)	56 Hz – 20 kHz
Coverage Angle	90 Degree Axisymmetric
Amplifier	Class D Peak:1800W (LF), 225W (HF)
Maximum Rated Spl	130 dB Peak
Transducer	LF Transducer: 10 Inch Cone
	HF Transducer: 1.4 Inch Titanium Diaphragm Compression Driver
Regulatory	CE, WEEE, UL
Mounting Bracket	Ceiling Mount

2.09. Audio DSP

Item Reference	2.09
Item Description	Audio DSP
Approved Make/Brand	Polycom, QSC, Symetrix, RCF
Minimum performance parameters	
No of Mic / Line Input	Min 8 Input
Output	Min 8 output
Frequency Response	20 Hz – 20 kHz
Phantom Power	+48 VDC
Input THD	+21 dBu Sensitivity & +21 dBu Input <0.1%
Control	Lan Control
USB Inputs & Outputs	16 Bit, 16x16 Channels
Ethernet Protocol	TCP, DHCP.
Ethernet Port	Min 2 RJ45 connectors
GPI x GPO	16 x16
Input Impedance	Min 5K ohms
Output Impedance	Min 220 Ohms
Safety Compliance	CE, c-UL, UL
Environmental Compliance	RoHS

3.00 Cables and Accessories

3.01. Branded Bulk Cables, Connectors and Accessories.

Item Reference	3.01
Item Description	Branded Bulk Cables, Connectors and Accessories.
Approved Make/Brand	MX, Neutrik
Connectors	Bulk Quantity Connectors required for this Project

3.02. Microphone Bulk Cable

Item Reference	3.02
Item Description	Microphone Cable
Approved Make/Brand	Belden, Canare, Kramer
Minimum performance parameters	
Conductor Gauge	24 AWG
Insulation / outer jacket material	PVC
Outer shield	Bare Copper
Voltage	100V RMS
No of pairs	1

3.03. Shielded Cat6 Cable

Item Reference	3.03
Item Description	Shielded Cat6 Cable
Approved Make/Brand	Crestron, Dlink, Kramer
Minimum performance parameters	
Structure	4 Pairs Shielded Twisted Pair screened with solid bare copper braiding (S/FTP) Cable
Conductor metal	23 AWG or better Solid Bare Copper
Shield individual pair	Aluminum Polyester Foil
Jacket material	PVC
Interconnection	Shield twisted pair cable with 23AWG or better copper conductor for network switches
Frequency	Min 250 MHz
Characteristics Impedance	Min 100Ω
Delay skew	Max 45nS

3.04. Audio/ Serial Control Cable

Item Reference	3.04
Item Description	Audio/ Serial Control Cable
Approved Make/Brand	Belden, Canare, Kramer
Minimum performance parameters	
Conductor	20 AWG tinned copper
No of conductor	4
Insulation	PP
Outer Jacket	PVC

3.05. Floor Box with Accessories

Item Reference	3.05
Item Description	Floor Box with Accessories
Approved Make/Brand	Legrand, MK
Minimum Performance Parameters.	
Provision	Box Provision for Mic Cable, Twisted pair Cable.

3.06. Equipment Rack

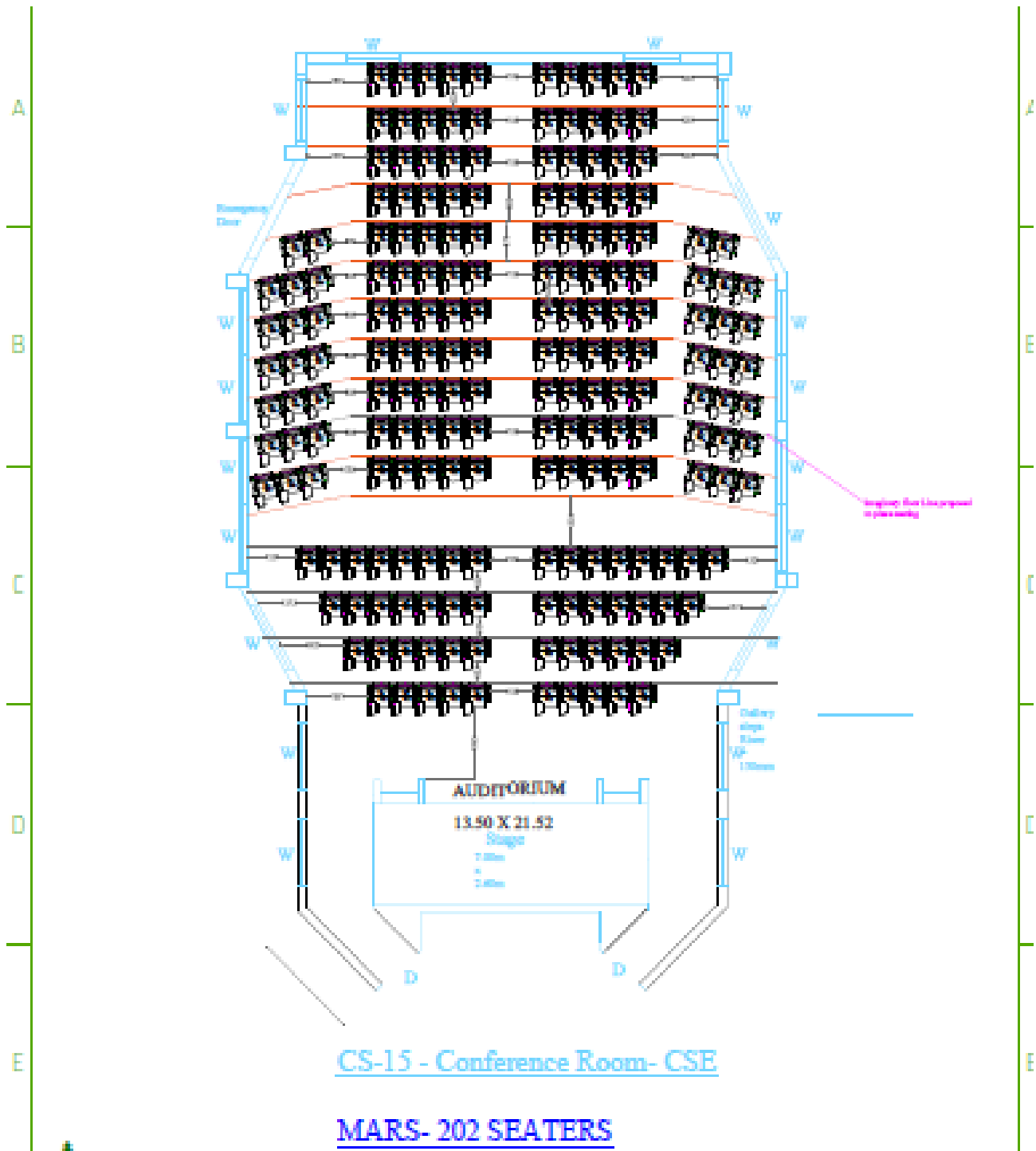
Item Reference	3.06
Item Description	Equipment Rack
Approved Make/Brand	APW, Rittal, WQ
Minimum performance parameters	
Size	Min 24U
Dimension	Min W 600 mm x D800mm
Door	Front Glass Door and Perforated rear and side panel
Power distribution Unit	5amp – 16socket , single pole – 16/32 Amp MCB
Fan	90 CFM
Mount	Floor Mount
Cable entry	Top and Bottom with round cut out edge protected with rubber grommets
Caster	Min 3” height with brake

3.07. Design, Installation, Commissioning, Cabling, Termination and Coordination and Project Management

Item Reference	3.07
Item Description	Design, Installation, Commissioning, Cabling, Termination , Programming and coordination with other contractors & Project management
Minimum performance parameters requirement for Integrator	The integrator shall have a full-fledged qualified team to execute the project

ANNEXURE -B

CSE CONFERENCE ROOM PLAN



ANNEXURE -C

TECHNICAL BID

COMPLIANCE STATEMENT

1. VENDOR ELIGIBILITY CRITERIA:

Sl.No.	Description	Compliance (Yes/ No)	Proof with Page No.
1.	The bidder should submit OEM authorization for all Make/brand of item for which they are submitting the bid.		
2.	The bidder shall have an annual financial turnover of not less than Rs. 4 Crores (Rupees Four Crores only) during the last three financial years i.e. 2015-16, 2016-17 and 2017-2018 (each year).		
3.	<p>The bidder should have experiences in Govt. Institutions/any of Central PSU's / any of central Government/ autonomous bodies/reputed firms in executing the following works (any one category) in the last 3 financial years.</p> <p>i) Two (2) similar contracts each costing not less than Rs. 20 Lakhs (Or) ii) One (1) similar contracts costing not less than Rs. 40 Lakhs</p> <p>Copies of the documents listed below should be submitted as a proof for the above work experience:</p> <p>i. Purchase Order ii. Work Completion Certificates iii. User Performance Certificate from End user</p>		

2. TECHNICAL SPECIFICATION SHEET FOR VIDEO SYSTEM

1.00 Video System

1.01. Projector

PROJECTOR			
Name of the Make/Brand and Model No			Make /Brand Name :
			Model No
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimums Performance Parameters			
Native Resolution	WUXGA (1920x 1200)		
Brightness	Min 10,000 lumens		
Light Source	Laser		
Lamp Life	Min 20000 hours		
Aspect Ratio	16:10		
Contrast	Min 10000 :1		
Display method	3- LCD/DLP projection system		
Screen Size	127 – 508 cm		
Center to corner Uniformity	Min 90%		
Vertical optical axis shift	+ 50%, -16%		
Horizontal Optical axis shift	+30%, -10%		
Vertical Keystone Correction	+/- 40°		
Horizontal Keystone Correction	+/-15°		
Inputs	Min 1 HDMI, 1 DVI-D , 1 VGA, 1 SDI		
Control / Monitoring	RS 232		

1.02. Projector Mount

Projector Mount			
Name of the Make/Brand and Model No			Make/Brand Name :
			Model No
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimums Performance Parameters			
Length	2.5 m Pole length		
Load capacity	Min 25 kg		
Swivel	360°		
Tilt Adjustment	+/-13°		
Roll Adjustment	+/- 6°		

1.03. Projection Screen

Projection Screen			
Name of the Make/Brand and Model No			Make/Brand Name :
			Model No
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimums Performance Parameters			
Screen Diagonal	Min 419 cm		
Surface	Matt White		
Control	In built Low Voltage Control		
Aspect	16:10		

1.04. Professional Display

Professional Display			
Name of the Make/Brand and Model No			Make/Brand Name :
			Model No
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Screen Size (Diagonal)	Min 165 cm		
Panel Resolution	Min 3840 x 2160		
Aspect Ratio	16:09		
Brightness	Min 500 Cd /m2		
Viewing angle (H/V)	Min 178 degree		
HDMI IN	Min 3 HDMI (HDMI 1.4 x 2, Hdmi 2.0 x1)		
VGA IN	Min 1 VGA		
USB IN	Min 3 (USB 3.0 x 2, USB 2.0 x1)		
Control Port	Min 1 RS 232		
Display port	DP x 1		
HDMI Out	Min 1		

1.05. Wall Mount Bracket

Wall Mount Bracket			
Name of the Make/Brand and Model No			Make/Brand Name :
			Model No
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Distance Support	Up to 100 Meters		
Switching	Auto Switching		
EDID & HDCP	Should Supports EDID and HDCP transmission		
Input	Min 1 HDMI and 1 VGA with audio 3.5mm Mini Jack		
Output	Min 1 HDBase T on RJ-45 Connector.		
Resolution	4K@60Hz (4:2:0) or higher and WUXGA		
Data rate	10.2 Gbps or higher		
Audio Embedding	Switcher should support audio embedding feature		
Mounting Type	Wall mount Plate		
Wall Plate	2 Gang Style wall plate		
Environmental Regulation	ROHS, WEEE		

1.06. Active Wall Plate

Active Wall Plate			
Name of the Make/Brand and Model No		Make/Brand Name :	
		Model No	
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Input	Min 4 HDMI, 2 VGA.		
Output	Min 1 HDMI, Min 1 RJ-45		
Distance support	Up to 70m		
Control Ports	RS232		
HDCP	HDCP Compliant		
Switching	Auto Switching		
Max Output Resolution	1920 x 1080P 60Hz		
Network Interface controller	Min 1 LAN		

1.07. Presentation Switcher

Presentation Switcher			
Name of the Make/Brand and Model No		Make/Brand Name :	
		Model No	
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Input	Min 1 HDMI		
Output	Min 4 HDMI		
HDCP	HDCP Compliant		
Max Data Rate	6.75Gbps		
EDID	EDID Pass Through		

1.08. Distribution Amplifier

Distribution Amplifier			
Name of the Make/Brand and Model No		Make/Brand Name :	
		Model No	
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Distance Support	Distance support should be up to 40m		
Video Resolution	4K at 60 Hz (4:2:0) 24 bpp or higher		
EDID and HDCP	Supports EDID and HDCP Compliant		
Input	Min 1 HDMI		
Output	Min 1 RJ 45		
Data Rate	Min 10.2 Gbps		
Chroma Sampling	4:02:00		
Control	Min 1 Bidirectional RS232		

1.09. HD Base T Twisted Pair Transmitter

HD Base T Twisted Pair Transmitter			
Name of the Make/Brand and Model No			Make/Brand Name :
			Model No
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Distance Support	Distance support should be up to 40m		
Video Resolution	4K at 60 Hz (4:2:0) 24 bpp or higher		
EDID and HDCP	Supports EDID and HDCP Compliant		
Input	Min 1 HDMI		
Output	Min 1 RJ 45		
Data Rate	Min 10.2 Gbps		
Chroma Sampling	4:02:00		
Control	Min 1 Bidirectional RS232		

1.10. HD Base T Twisted Pair Receiver

HD Base T Twisted Pair Receiver			
Name of the Make/Brand and Model No			Make/Brand Name :
			Model No
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Distance Support	Distance support should be up to 40m		
Video Resolution	up to 4K at 60 Hz (4:2:0) 24 bpp		
EDID and HDCP	Supports EDID and HDCP Compliant		
Input	Min 1 RJ 45		
Output	Min 1 HDMI		
Data Rate	Min 10.2 Gbps		
Chroma Sampling	4:02:00		
Control	Min 1 Bidirectional RS232		

1.11. Tablet Monitor

Tablet Monitor			
Name of the Make/Brand and Model No			Make/Brand Name :
			Model No
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Size	Min 39 cm Diagonal		
Resolution	1920 x 1080 Pixels		
Aspect Ratio	16:09		
Brightness	Min 200 cd/m ²		
Contrast Ratio	Min 800:1		
Response time	30 ms		
Viewing angle	170° / 170°		
Reading technology	Electromagnetic Resonance		
Pen Pressure Levels	1024		
Pen report rate	Min 197 points per second		
Pen tether	Yes		
Coordinate Accuracy	+/- 0.5mm (Center)		
System requirement	Windows 10/8.1/8/7 (32-bit, 64-bit), Mac OS 10.9 and later		
Input	1 HDMI		
Mounting	Flat Adjustable Mounting stand with inclination of 15°		

1.12. PC with Dual HDMI

PC with Dual HDMI			
Name of the Make/Brand and Model No		Make/Brand Name :	
		Model No	
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Processor	I5 or higher (I7)		
Memory	Min 500 GB		
Ram	Min 4 GB		
Monitor output	Dual HDMI		
USB Port	Min 1 USB 3.0, 1 USB 2.0		
MS Office	In built		
Keyboard and Mouse	Wireless		
Antivirus	In built		

1.13. Podium

Podium			
Name of the Make/Brand and Model No		Make/Brand Name :	
		Model No	
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Front Size	120 cm H x 50cm W x 45 cm D		
Presenter Side	115 cm H		
Provision	Should have sufficient face to mount Mic,		
	Tablet monitor, PC Provision has to be provided		

1.14. VGA Audio Interface Cable

VGA Audio Interface Cable			
Name of the Make/Brand and Model No		Make /Brand Name :	
		Model No	
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Length	180 cm		
Connector	Terminated with high quality molded VGA connectors and 3.5 mm connectors for audio		

1.15. HDMI Interface Cable

HDMI Interface Cable			
Name of the Make/Brand and Model No			Make/Brand Name :
			Model No
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Length	180 cm		
Resolution	4K@60Hz (4:4:4) or higher, Deep Color, CEC,Dolby TrueHD,DTS-HD,Lip Sync.		

1.16. Control Processor

Control Processor			
Name of the Make/Brand and Model No			Make/Brand Name :
			Model No
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Bi Directional Ports	8 RS-232, 8 GPI/O, 1 Ethernet, 1 Micro-USB.		
Inputs	1 Built in IR		
Outputs	8 IR Out and 8 Relays.		
Processor Speed	1 GHz		
Memory	512 MB RAM,4 GB Flash		

1.17. I Pad 2017 - 32GB with Docking and Charging Station

I Pad 2017 - 32GB with Docking and Charging Station			
Name of the Make/Brand and Model No			Make/Brand Name :
			Model No
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Display	Min 24 cm (diagonal) IPS LED-backlit Multi-Touch Retina display		
Resolution	2048x1536		
Processor Chip	A10		
Memory	Min 32 GB		
Mounting Enclosure	Enclosure & Stand for I Pad		
Mount & Charger	Magnetic table mount and inductive charger		

1.18. Wireless Access Point

Wireless Access Point			
Name of the Make/Brand and Model No			Make/Brand Name :
			Model No
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Network Standard	IEEE 802.11n, IEEE 802.11g, IEEE 802.11b, IEEE 802.11a		
Antenna	4		
Security Features	WEP,WPA,WPA2		
Operating Frequency	2.4 GHz& 5 GHz		
Ethernet port	4 x 10/100		

1.19. Ethernet Switch

Ethernet Switch			
Name of the Make/Brand and Model No			Make/Brand Name :
			Model No
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Switching Capacity	40 Gbps		
Port Standards	IEEE 802.3 10BASE-T, IEEE802.3u 100BASE-TX, IEEE 802.3ab 1000BASE-T		
Quality of Service	Priority queues, Queue Handling Strict, Weighted round robin, Bandwidth control, IPV6 Traffic class.		
Ports	8 Port Gigabit Ethernet		
POE Ports	Min 8 Port		
Flash	16 MB		
CPU Memory	128 MB		
MAC Table	Upto 16K MAC addresses		
Jumbo frames	Frame sizes up to 9K bytes supported on 10/100 and Gigabit interfaces		
Dual Stack	IPv4 and IPv6		

2.00 Audio System

2.01. Gooseneck microphone system with Shock Mount

Gooseneck microphone system with Shock Mount			
Name of the Make/Brand and Model No			Make/Brand Name :
			Model No
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Frequency Response	50 – 19000 Hz		
Nominal Impedance	< 200 Ohms		
Type	3 pin XLR Male		
Goose length	Min 50 cm		
Polar Pattern	Cardioid		
Mute or On/Off Switch	Needed		
Mount	Shock Resistance Mount		
Signal to noise ratio	69 dB		
Max SPL	107 dB		
Phantom Power	12 – 48V		
Operating Principle	Pressure Gradient		
Lid Cover	Removable mounted in shock mount		
LED Ring	Needed		

2.02. Wireless Handheld Microphone Set

Wireless Handheld Microphone Set			
Name of the Make/Brand and Model No		Make/Brand Name :	
		Model No	
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Audio Frequency Response	45 – 15 kHz		
Audio Dynamic Range	106dB		
Polar Pattern	Cardioid		
Gain Switch	2 Stage		
Display	LCD		
Transmitter and Receiver	518-548 Mhz, 606-636 Mhz, 794-832Mhz, 1785-1805Mhz		
Range	Min 120 m		

2.03. Wireless Lapel Microphone Set

Wireless Lapel Microphone Set			
Name of the Make/Brand and Model No		Make/Brand Name :	
		Model No	
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Audio Frequency Response	20 – 20000 Hz		
Polar Pattern	Omni directional		
Transducer type	Condenser		
Display	LCD		
Transmitter and Receiver	518-548 MHz, 606-636 MHz, 794-832 MHz, 1785-1805 MHz		
Range	Min 120 m		

2.04. Antenna Splitter

Antenna Splitter			
Name of the Make/Brand and Model No		Make/Brand Name :	
		Model No	
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Frequency Response	470 - 832 MHz		
Connectors	Input / Output BNC socket		
Antenna	6 way wideband antenna		
Antenna supply	Min 8 V DC, 200mA per Input		

2.05. Antenna Amplifier

Antenna Amplifier			
Name of the Make/Brand and Model No			Make/Brand Name :
			Model No
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Frequency Response	470 to 1000 MHz		
RF Connection	Input / Output BNC Socket		
Wave Impedance	50 Ohms		
Amplification Switchable	3 stages 5dB, +10dB, +15 dB		
Supply via antenna cable	8 – 9 V DC, 75mA		

2.06. Antenna with Mounting Bracket

Antenna with Mounting Bracket			
Name of the Make/Brand and Model No			Make/Brand Name :
			Model No
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Frequency Range	470 to 790 MHz		
Antenna	Passive transmitting and receiving		
Antenna Gain	2, 5 dBi		
Antenna Polar Pattern	Omnidirectional		
Voltage Standing Wave Ratio	< 2 (rel. to 50 Ohms)		
Mounting	Wall Mount or Ceiling Mount & 360° Horizontal Vertical Adjustable.		
Bracket			

2.07. Antenna cable

Antenna cable			
Name of the Make/Brand and Model No			Make/Brand Name :
			Model No
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Cable	2.4 GHz		
Bend Radius	25mm		
Features	Should be from same OEM of the microphone		

2.08. Loud Speaker System with Ceiling Mount

Loud Speaker System with Ceiling Mount			
Name of the Make/Brand and Model No		Make/Brand Name :	
		Model No	
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Frequency Range (-10dB)	50 Hz – 20 kHz		
Frequency Response(-6dB)	56 Hz – 20 kHz		
Coverage Angle	90 Degree Axisymmetric		
Amplifier	Class D Peak:1800W (LF), 225W (HF)		
Maximum Rated Spl	130 dB Peak		
Transducer	LF Transducer: 10 Inch Cone		
	HF Transducer: 1.4 Inch Titanium Diaphragm Compression Driver		
Regulatory	CE,WEEE, UL		
Mounting Bracket	Ceiling Mount		

2.09. Audio DSP

Audio DSP			
Name of the Make/Brand and Model No		Make/Brand Name :	
		Model No	
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
No of Mic / Line Input	Min 8 Input		
Output	Min 8 output		
Frequency Response	20 Hz – 20 kHz		
Phantom Power	+48 VDC		
Input THD	+21 dBu Sensitivity & +21 dBu Input <0.1%		
Control	Lan Control		
USB Inputs & Outputs	16 Bit, 16x16 Channels		
Ethernet Protocol	TCP, DHCP.		
Ethernet Port	Min 2 RJ45 connectors		
GPI x GPO	16 x16		
Input Impedance	Min 5K ohms		
Output Impedance	Min 220 Ohms		
Safety Compliance	CE, c-UL, UL		
Environmental Compliance	RoHS		

3.00 Cables and Accessories

3.01. Branded Bulk cables, Connectors and Accessories

Branded Bulk cables, Connectors and Accessories			
Name of the Make/Brand and Model No		Make/Brand Name :	
		Model No	
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Connectors	Bulk Quantity Connectors required for this Project		

3.02. Microphone Bulk Cable

Microphone Bulk Cable			
Name of the Make/Brand and Model No		Make/Brand Name :	
		Model No	
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Conductor Gauge	24 AWG		
Insulation / outer jacket material	PVC		
Outer shield	Bare Copper		
Voltage	100V RMS		
No of pairs	1		

3.03. Shielded Cat6 Cable

Shielded Cat6 Cable			
Name of the Make/Brand and Model No		Make/Brand Name :	
		Model No	
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Structure	4 Pairs Shielded Twisted Pair screened with solid bare copper braiding (S/FTP) Cable		
Conductor metal	23 AWG or better Solid Bare Copper		
Shield individual pair	Aluminum Polyester Foil		
Jacket material	PVC		
Interconnection	Shield twisted pair cable with 23AWG or better copper conductor for network switches		
Frequency	Min 250 MHz		
Characteristics Impedance	Min 100Ω		
Delay skew	Max 45nS		

3.04. Audio/ Serial Control Cable

Audio/ Serial Control Cable			
Name of the Make/Brand and Model No		Make/Brand Name :	
		Model No	
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Conductor	20 AWG tinned copper		
No of conductor	4		
Insulation	PP		
Outer Jacket	PVC		

3.05. Floor Box with Accessories

Floor Box with Accessories			
Name of the Make/Brand and Model No		Make/Brand Name :	
		Model No	
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Provision	Box Provision for Mic Cable, Twisted pair Cable		

3.06. Equipment Rack

Equipment Rack			
Name of the Make/Brand and Model No		Make/Brand Name :	
		Model No	
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters.			
Size	Min 24U		
Dimension	Min W 600 mm x D800mm		
Door	Front Glass Door and Perforated rear and side panel		
Power distribution Unit	5amp – 16socket , single pole – 16/32 Amp MCB		
Fan	90 CFM		
Mount	Floor Mount		
Cable entry	Top and Bottom with round cut out edge protected with rubber grommets		
Caster	Min 3" height with brake		

3.07. Design, Installation, Commissioning, Cabling, Termination and Coordination and Project Management

INSTALLATION, COMMISSIONING, CABLING, TERMINATION, PROGRAMMING AND COORDINATION WITH OTHER CONTRACTORS & PROJECT MANAGEMENT			
Name of the Make and Model No		Make Name :	
		Model No	
Description		Compliance	Details of Catalogue/ Data Sheet Proof with Page No in the tender document.
		(Yes/ No)	
Minimum Performance Parameters requirement for Integrator.			
The integrator shall have a full-fledged qualified team to execute the project.			

ANNEXURE -D

OEM CERTIFICATION FORM
(in Original Letter Head of OEM)

Tender No:

Dated:

We are Original Equipment Manufacturers (OEM) of..... (Name of the company)

Ms..... (Name of the vendor) is one of our Distributors/Dealers/Resellers/Partners (tick one) for the and is participating in the above mentioned tender by offering our product model.....(Name of the product with model number).

..... is authorized to bid, sell and provide service support warranty for our product as mentioned above.

Name and Signature of the authorized signatory of OEM along

With seal of the company with Date :

SCHEDULE

Name of Organization	Indian Institute of Technology Madras
Tender Type (Open/Limited/EOI/Auction/Single)	OPEN TENDER
Tender Category (Services/Goods/works)	Goods/Services
Type/Form of Contract (Work/Supply/ Auction/ Service/ Buy/ Empanelment/ Sell)	Supply
Product Category (Civil Works/Electrical Works/Fleet Management/ Computer Systems)	DESIGN, SUPPLY,INSTALLATION AND COMMISSIONING OF VIDEO AND AUDIO SYSTEM IN CSE CONFERENCE ROOM – IIT MADRAS
Source of Fund (Institute/Project)	IIT Madras
Is Multi Currency Allowed	No
Date of Issue/Publishing	13.11.2019
Pre- bid Meeting Date and time	19.11.2019 at 4.00 p.m.
Document Download/Bid clarification Start Date	13.11.2019
Bid clarification end date	-
Bid submission start date	20.11.2019
Document Download end date	03.12.2019
Last Date and Time for Uploading of Bids	03.12.2019 before 2.00p.m
Date and Time of Opening of Technical Bid	04.12.2019 at 4.00p.m.
EMD	Rs.90,000/-
No. of Covers (1/2/3/4)	2
Bid Validity days (180/120/90/60/30)	120 Days
Address for Communication	The Deputy Registrar Stores & Purchase Section IIT Madras Chennai – 600 036
Contact No.	<u>Technical Related Queries:</u> Mr. C.R.Jeevandoss Instrumentation Engr. IIT Madras Chennai – 600 036. Phone No: 044- 2257 4947
Email Address	adstores@iitm.ac.in