

राष्ट्रीय प्रौद्योगिकी संस्थान पुदुच्चेरी  
थिरुवेत्ताकुडी, कारैक्काल – 609 609.  
**NATIONAL INSTITUTE OF TECHNOLOGY PUDUCHERRY**  
Thiruvettakudy, Karaikal – 609 609.  
Union Territory of Puducherry



## Tender Document

For

Supply, Installation, Testing and Commissioning of Smart Class  
room cum Video conferencing system

at

National Institute of Technology Puducherry  
Thiruvettakudy, Karaikal – 609 609  
Union Territory of Puducherry  
India.

National Institute of Technology Puducherry @ Karaikal an autonomous Institute established under Ministry of Human Resource Development, Government of India would like to procure the following items.

<b>Item</b>	:	Supply, Installation, Testing and Commissioning of Smart Class room cum Video conferencing system
<b>Tender Enquiry No</b>	:	NITPY/2017-18/SC&VC /001 <b>Dated : 12/05/2017</b>
<b>Due Date (For submission of bids)</b>	:	<b>03.00 P.M. 30.06.2017</b>
<b>Technical Bid Opening time</b>	:	<b>04.00 P.M. 30.06.2017</b>
<b>EMD</b>	:	2% of total quoted cost towards Earnest Money Deposit (EMD) through online State Bank Collect mode under the payment category of Administrative/Miscellaneous <a href="https://www.onlinesbi.com/prelogin/icollecthome.htm">https://www.onlinesbi.com/prelogin/icollecthome.htm</a> . EMD or Performance security will bear no interest whatsoever. <b>The copy of the payment receipt should be enclosed along with the Technical bid of tender document.</b>
<b>Eligibility Criteria</b>	:	The Contractors / Tenderers should have experience in supply/ Commissioning of similar work with atleast ONE similar work of Rs.75,00,000/- or above (or) TWO similar works each of Rs.50,00,000/- (or) above executed during the last 3 years with reputed educational institutions, organizations, etc., along with the copy of orders.
<b>Submission of Offer</b>	:	<b><u>Two Bid System:</u></b> Two bid system will be followed for this tender. In this system the bidder must submit his offer in <b>two separate sealed envelopes</b> . Both the technical bid and commercial bid envelopes should be securely sealed and stamped separately and clearly marked as <b>"Envelope No : 1 – Technical Bid"</b> and <b>"Envelope No : 2 – Commercial Bid"</b> respectively. EMD should be placed in the Envelope No : 1, Technical Bid.
<b>Place of Submission</b>	:	Please send the tenders in a sealed envelope superscribed as <b>"Supply, Installation, Testing and Commissioning of Smart Class room cum Video conferencing system Ten. Notification NO: NITPY/2017-18/SC&amp;VC /001"</b> so as to reach  The Registrar (i/c) National Institute of Technology Puducherry Thiruvettakudy, Karaikal – 609 609 Union Territory of Puducherry India.

**INSTRUCTIONS TO BIDDERS**

1. This document set contains the following:
  - a) Terms and conditions of the Tender
  - b) Details of the Firm offering this Quote
  - c) Technical Compliance Form
  - d) Quotation form (Price Bid)
  - e) Currency Form (quoted on behalf of the foreign suppliers)
  - f) NIT Puducherry's check list copy
2. The bidder's copy is for your future records. **Please fill in and return only NIT Puducherry's copy.**
3. The bidder should give details of their technical soundness and provide list of customers of previous supply of similar items to Universities, Institutes or Government Departments / Undertakings/public sectors with contact details. The details of the agency / profile should be furnished along with the copy of all related documents.
4. Read through the terms and conditions given and affix your signature and seal if you find them acceptable. Any deviations may be recorded. Read carefully list of specifications that we have enclosed.
5. Fill in the questionnaire regarding the Firm.
6. The downloaded documents 'Technical Compliance Form' and 'Quotation Form (Price Bid)' should be TYPE WRITTEN USING CAPITAL LETTERS ONLY. At the time of filling the "Quotation Form (Price Bid)" make sure that you have not missed anything. Specify the model number & specification for each item. The form should be filled item-wise. Do not leave blank fields. If you are not quoting for a specific item, you should specify "NOT QUOTING".
7. Do not use ambiguous terms like "yes", "complied" or "available". Specifically mention the matching specification of the product offered by you. Make sure that all the documents should be duly signed by you with date and seal.

<b>CHECKLIST TO BE FILLED IN BY BIDDER</b>	
List of documents to be enclosed	Completed & Signed
1. Terms and Conditions form	YES / NO
2. Details of the Firm offering this Quote	YES / NO
3. NIT Puducherry's Quotation form (Technical & Price Bid)	YES / NO
4. Currency Form(quoted on behalf of the foreign suppliers)	YES / NO
5. Other technical specifications & pamphlets	YES / NO

- Note:** 1. "Cover" should contain the following:
- a. Form of "**Acceptance of Terms and Conditions**".
  - b. Form of "**Firm details**"
  - c. Pamphlets, if any (in a separate sealed cover)
  - d. Quotation Form (Technical, Price Bid and Currency Form)

**Please retain this page with you for your future reference**

**Cover 1: EMD and Tender cost**

(should be superscribed as 'EMD and tender cost cover' duly indicating the Tender reference No. and the due date of opening)

Earnest Money Deposit (EMD) and tender cost are to be submitted by way of Demand Draft drawn on any Nationalized bank in India in favor of "The Director, NIT Puducherry, Karaikal" payable at Karaikal. The bids submitted without EMD or tender cost will be treated as non-responsive and will be rejected. **EMD shall bear no interest.**

**Cover 2: Technical Bid**

(should be superscribed as 'Technical Bid' duly indicating the Tender reference No. and the due date of opening)

Should contain:

- a. Technical pamphlets
- b. Detailed technical specification
- c. Copy of license certificate for manufacture/supply of the item\*
- d. Income Tax PAN number & TIN number.\*
- e. Last three years balance sheet approved by the CA and the IT clearance certificate.\*
- f. Warranty period offered for the tendered item to be specified. If the warranty period is not conforming with the schedule of requirements given in section 3 of the Tender document, the bid is liable to be treated as non-responsive and will be rejected.
- g. Duly filled up technical questionnaire, if any
- h. Duly filled up deviation schedules to technical specifications, if any
- i. Copy of supply orders completed during the last three years

\* Appropriately pertaining to the country of origin.

**Cover 3: Price Bid**

(should be superscribed as 'Price Bid' duly indicating the Tender reference No. and the due date of opening)

Should contain:

- a. Price bid as per the format in Section-4 of the tender document
- b. Break-up price as per the format in Annexure-A

**Note:**

- a. If the prices are revealed in cover 1 or in cover 2, the offer will be summarily rejected.
- b. Each Cover shall be sent in a double sealed cover. The inner covers (Cover 1, Cover 2 and Cover 3) should be sealed individually with the Sellers's distinctive seal and superscribed with the tender reference No. and due date of opening. All inner covers shall be placed in a common outer cover which shall also be sealed with seller's distinctive seal and superscribed with the tender reference No. and due date of opening.

**SECTION : 2 – TERMS AND CONDITIONS FORM**

1. The Bidders are requested to give detailed tender in their **own forms** in two bids.  
**Part-1** : **Technical Bid**  
**Part-2** : **Commercial Bid**
2. Tenders, which are submitted without following the two bid offer system will summarily be rejected.
3. The tender document can be downloaded from the National Institute of Technology Puducherry website [www.nitpy.ac.in](http://www.nitpy.ac.in)
4. **Envelope No-1 : Technical Bid**  
The technical offer **should not contain any price information**. The technical offer should comprise of the following:
  - i) Earnest Money Deposit (EMD).
  - ii) The technical bid should be comprehensive and shall indicate all specification of the all products and services. Each page of the bid and cutting / corrections shall be duly signed and stamped by the bidder. Failure to comply with this requirement may result in the bid being rejected.
  - iii) If the bid is for branded makes, an authorization letter from principals clearly indicating that the vendor is competent and authorized to sell and provide services towards the items shall be enclosed.
  - iv) List of deliverables / bill of materials and services.
  - v) Bids should have a validity of **90 days**.
5. **Envelope No-2 : Commercial Bid**  
This should contain only the price information along with commercial terms and conditions. The commercial bids of **only the shortlisted bidders** shall be considered for further processing.
6. **Technical Evaluation Committee**
  - i) A committee duly constituted by The Registrar (i/c), NIT Puducherry will go through the technical aspects of the tender and recommend short listed firms. The recommendation of the technical committee shall be final and binding on all the parties.
  - ii) The technical committee will examine all the technical aspects of the bids received. Further, the technical committee may seek additional information from the existing users at NIT Puducherry or from other Institutes and also call for technical presentations from the bidders if required.
  - iii) The bidders are required to submit the sample for evaluation before the stipulated time.
  - iv) No cost will be paid by NIT Puducherry for sample.

## 7. **Opening of Commercial Bids**

- i) NIT Puducherry will open commercial bids of only the shortlisted bidders in the presence of the bidders or their authorized representatives who choose to attend the commercial bid opening. The date and time of opening the commercial bid will be intimated only to pre-qualified and technically acceptable bidders for the item at a later date. The representatives of shortlisted firms only will be allowed for commercial bid opening.
- ii) No sub-contracting is allowed with regard to installation, commissioning, training, warranty, maintenance and after sales service. This is the sole responsibility of the principals / their authorized agents.
- iii) The NIT Puducherry reserves the right to accept the offer in full or in parts or reject summarily or partly.

## 8. **Delivery Period / Timelines**

The deliveries and installation must be completed within 04 - 06 weeks from the date of purchase order. The time is the essence of the contract. It is mandatory for the bidders who respond to this bid to meet this expectation.

## 9. **Locations for the supply / services**

The items covered by this document is required to be supplied and installed at

National Institute of Technology Puducherry  
Thiruvettakudy, Karaikal – 609 609  
Union Territory of Puducherry  
India

10. NIT Puducherry will not provide any accommodation / transportation for the engineers / representatives for attending installation, commissioning and demonstration work. It is the absolute responsibility of the principal supplier / agent to make their own arrangements.

## 11. **Purchasers right to vary quantities at the time of award**

NIT Puducherry reserves the right at the time of award of contract to increase or decrease the quantity of items specified in the schedule of requirements without any change in price or other terms and conditions.

## 12. **Price**

The price quoted shall be considered firm and no price escalation will be permitted. The quote should be for **Destination** at National Institute of Technology Puducherry, Thiruvettakudy, Karaikal – 609 609, Union Territory of Puducherry.

- i) The packing, forwarding, freight, insurance and commissioning charges, if any extra may be quoted separately in commercial bid.

ii) The actual sales tax percentage (without form "C") if any, should be specified.

**13. Performance Bank Guarantee**

The vendor will have to furnish performance bank guarantee for 10% of the total purchase order value, to be valid for entire warranty period plus two months from the date of installation and acceptance.

**14. Installation**

- i) Bidder shall be responsible for installation, demonstration and for after sales service during the warranty and thereafter.
- ii) Installation and demonstration to be arranged by the supplier free of cost and the same is to be done within 15 days of the arrival of the equipments at site.

**15. Warranty / Support**

- i) The items supplied shall carry a minimum of **THREE year of comprehensive warranty** from the date of acceptance of the equipment.
- ii) Defects, if any, during the guarantee / warranty period are to be rectified free of charge by arranging free replacement wherever necessary. This includes cost, insurance, freight, custom duty, octroi, local taxes if any and should be borne by the beneficiary or his agent. A clear confirmation should be given for this item.

**16. Indemnity**

The vendor shall indemnify, protect and save NIT Puducherry against all claims, losses, costs, damages, expenses, action suits and other proceeding, resulting from infringement of any law pertaining to patent, trademarks, copyrights etc., or such other statutory infringements in respect of all the items supplied by him.

**17. Freight and Insurance**

The items to be supplied will be insured by the vendor against all risks of loss or damage from the date of shipment till such time it is delivered at NIT Puducherry permanent campus.

**18. Payment**

90% payment shall be made at site against delivery, installation, commissioning and acceptance as per purchase order and balance 10% shall be made after receipt of performance bank guarantee. If no bank guarantee is given, the balance 10% will be paid after the warranty period plus two months.

**19. Penalty for delayed services / LD**

- i) As time is the essence of the contract, delivery period mentioned in the purchase order should be strictly adhered to. Otherwise NIT Puducherry will forfeit EMD and also LD clause will be applied / enforced.
- ii) If the supplier fails to supply, and fix the item as per specifications mentioned in the order within the due date, the supplier is liable to pay liquidated damages of 1% of order value for delay of every week or part here of subject to a maximum

of 10% beyond the due date. Such money will be deducted from any amount due or which may become due to the supplier.

- iii) NIT Puducherry reserves the right to cancel the order in case the delay is more than 10 weeks. Penalty as at (ii) above will be deducted from the security deposit.

**20. Jurisdiction**

The disputes, legal matters, court matters, if any, shall be subject to Karaikal Court Jurisdiction only.

**21. Force Majeure**

NIT Puducherry may consider relaxing the penalty and delivery requirements, as specified in this document, if and to the extent that the delay, in performance or other failure to perform its obligations under the contract, is the result of a force majeure.

**22. Arbitration**

All disputes of any kind arising out of supply, commissioning, acceptance, warranty maintenance etc., shall be referred by either party (NIT Puducherry or the bidder) after issuance of 30 days notice in writing to the other party clearly mentioning the nature of dispute and will be referred to the arbitrator to be nominated by The Registrar (i/c), NIT Puducherry, Karaikal. The Venue for arbitration shall be Karaikal, Union Territory of Puducherry, India.

**23. Interpretation of the clauses in the Tender Document / Contract Document**

In case of any ambiguity / dispute in the interpretation of any of the clause in this tender document, interpretation of The Registrar (i/c), NIT Puducherry, Karaikal shall be final and binding on all parties.

24. Purchase Order may be issued to the supplier based on the lowest price of the each item.

**-Sd-  
Registrar (i/c)  
NIT Puducherry**



**“DETAILS OF THE FIRM OFFERING THIS QUOTE”**  
**(Write or print or type in block letters)**

1. Name of the firm: \_\_\_\_\_ Date of incorporation: \_\_\_\_\_
2. Nature of the company (tick one): Government / Public / Private Company / Partnership / Proprietorship
3. Specify the number of years in this line of activity by the Company:
4. Quantity of sales in the last three years for the “.....” (same model that you have quoted):

2014-2015	2015-2016	2016-2017

5. Turnover in the last three years (Lakh Indian Rupees):

2014-2015	2015-2016	2016-2017

6. Provide the postal address, telephone & fax numbers, and email address of the nearest service center.
7. Number of service engineers in the above location trained on the product quoted along with their educational qualification, certification and designation (applicable only for instruments):
8. Assured response time for service calls in hours:
9. Delivery period from the date an official purchase order placed (in weeks):
10. Enclose the list of customers to whom you have supplied “.....” during the last 3 years ending 31/12/2016 with full postal address and name of the contact person with phone, FAX numbers, and E-Mail id. Certificate regarding satisfactory performance of the “.....” from the minimum three end users should be furnished.
11. Enclose the certificate regarding the authorized dealer or distributor for the products quoted.
12. On Manufacturer’s Side to whom NIT Puducherry have to contact in case of delayed in supply and other issues committed by the authorized dealer / distributor / reseller :

Contact Person Name :

Address :

E-mail ID :

Telephone / Cell Phone :

## **DECLARATION**

I/we have not tampered/modified the tender forms in any manner. In case, if the same is found to be tampered/modified, I/we understand that my/our tender will be summarily rejected and full Earnest Money Deposit (EMD) will be forfeited and I/we am/are liable to be banned from doing business with NIT Puducherry and /or prosecuted.

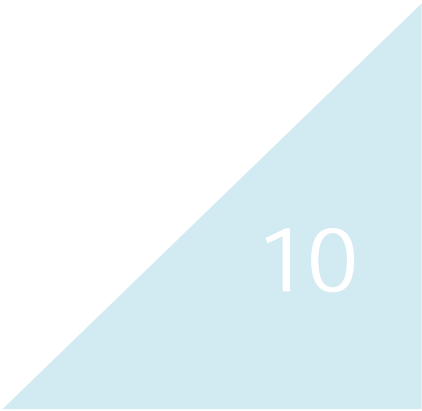
**Signature of the Bidder:** .....

**Name and Designation:** .....

**Business Address:** .....  
.....  
.....

**Place :**

**Date : Seal of the Bidder's Firm**



## SECTION 3 – SPECIFICATION

### ITEMS REQUIRED

Sl. No	Item Description for a room of 60 capacity *	Preferred Make	Qty	Complied Y/N	Quoted Brand/Make
	<b>Audio System</b>				
1	Wireless handheld	Shure /Sennheiser /Beyerdynamics / RCF	2		
2	Wireless Lapel Microphone	Shure / Sennheiser /Beyerdynamics / RCF	1		
3	Mono 70 Amplifier - 200 Watts	RCF / Bose /Renkus Heinz /Camco / PowerSoft/ Extron	1		
4	3" full range flat field Ceiling loudspeaker - Paired	RCF / Bose /Renkus Heinz /Martin Audio /L-Acoustics /EAW /Extron	3		
	<b>Switching system</b>				
5	Two Input DTP Transmitter for HDMI and VGA with Audio Embedding	Extron /Crestron /Kramer /AMX	1		
6	10x8 Seamless 4K Scaling Presentation Matrix Switcher	Extron /Crestron /Kramer /AMX	1		
	<b>VC System</b>				
7	Group 700 CODEC ONLY SKU (no camera, microphone array, power cord) - 720p, NTSC/PAL. Includes remote control and 2 cables: 1.8m HDMI, 3.6m CAT 5E LAN. CALA includes Service in price. ROW require purchase of separate Service Product ID.	Polycom/Cisco/Peoplelink	1		
8	Partner Premier, One Year, CODEC ONLY. Real Presence Group 700 HD codec -720p	Polycom/Cisco/Peoplelink	1		
9	Group Series 1080p HD License-1080 encode/decode for people and content. Valid for Group 300, 500, 550, 700	Polycom/Cisco/Peoplelink	1		
10	Group Series and Centro	Polycom/Cisco/Peoplelink	1		

	Multipoint License. 6-way on Group 500, Group 550, and Centro. 8-way on Group 700.				
11	Auto tracking camera (VHD)	Polycom/Cisco/Peoplelink	2		
	<b>Display &amp; Interactive System</b>				
12	80 inch Class FULL HD LCD Display with wall mount kit	Panasonic/Sharp/SONY/LG /SAMSUNG /EIS/ Extron/ Apple	2		
13	Interactive Touch Overlay for above 80" display		1		
14	HDCP-Compliant Annotation Processor with DTP Extension		1		
15	Twisted Pair Extender for USB Peripherals		1		
16	H.264 Streaming and recording processor		1		
17	Wireless Collaboration Gateway		1		
18	Interactive Pad Air 2 Wifi 16GB Space Gray		1		
19	Sever for Both Storage and Streaming			1	
<b>Dimmable downlight</b>					
20	Dimmable downlight	Philips/ RTI/ Hager	20		
21	RTI XP3 Remote Technologies Incorporated Xp-3Central Processor with 3IR,1Rs232,2Relays, 2 Sense port with 1 viewer license		1		
22	License		1		
23	Power supply 1x 30V DC + 1x 24V DC		1		
24	DALI gateway		1		
25	Interface		1		
26	Berker R.1 touch sensor 3gang with thermostat, glass Black		1		

	<b>AV Cables</b>				
27	Av includes HDMI, VGA, Audio & Speakers	<b>Klotz / Sommer / Canare / Extron</b>	<b>1</b>		
	<b>Head End System</b>				
28	Closed Equipment Rack	<b>Reputed</b>	<b>1</b>		
29	Installation, Testing, Commissioning & Programming Charges	<b>Reputed</b>			
30	Installation, Testing and Commissioning for Server and lighting	<b>Reputed</b>			

**\*NOTE : The detailed specifications of the above mentioned items are listed in Annexure I.**

## Annexure I

<b>Wireless Handheld microphone</b>	
Frequency Range	UHF band 506.000 - 865.000 MHz
Number of Channels	16 total
Modulation Mode	FM
Normal Deviation	±40 kHz
Operating Range	100 m typical
Frequency Response	80 Hz to 16 kHz or better
<b>Receiver Specification</b>	
Receiving System	True diversity Receiver (UHF)
Signal-to-noise Ratio	>103 dB
Total Harmonic Distortion	<=0.5% (at 1 kHz)
Sensitivity	2 µV
Output Level	1.2 v
Output Connectors	AF output, 3-pin XLR, balanced AF output, 1/4" jack (6.35 mm), unbalanced
<b>Transmitter Specification</b>	
Radiated Tx Power	10 mW
Transducer type	Dynamic
Polar Pattern	Super cardioids
Batteries	Two 1.5V AA alkaline
OEM Authorization	OEM Authorization Letter mandatory specific to this enquiry
<b>Wireless Lapel Microphone :</b>	
<b>Microphone Specification</b>	
Frequency Range	UHF band 506.000 - 865.000 MHz
Number of Channels	16 total
Modulation Mode	FM
Normal Deviation	±40 kHz

Frequency Response	80 Hz to 16 kHz or better
<b>Receiver Specification</b>	
Receiving System	True diversity Receiver (UHF)
Signal-to-noise Ratio	>103 dB
Total Harmonic Distortion	<=0.5% (at 1 kHz)
Sensitivity	2 $\mu$ V
Output Level	1.2 v
Output Connectors	AF output, 3-pin XLR, balanced AF output, 1/4" jack (6.35 mm), unbalanced
<b>Body Pack Transmitter Specification</b>	
Radiated Tx Power	20 mW
Transducer type	Condenser
Polar Pattern	Omni Directional
Batteries	Two 1.5V AA alkaline (not included)
<b>Mono Channel Amplifier</b>	
Output Power	200 watts rms, 70 V, 1 kHz, <0.1% THD
Frequency Response	80 Hz to 16 kHz or better, $\pm$ 1 dB
Amplifier type	Class D
Input	1 stereo or 2 mono, balanced/unbalanced
Output	1 mono, 70 V line
S/N Ratio	100 dB, 20 Hz - 20 kHz, unweighted
Damping factor	>100 @ 25 ohms
<b>Full Range flat field Ceiling loudspeaker</b>	
Package	2 speakers (1 pair) with 2' (61 cm) cross bars
Speaker type	1-way, full-range, in-ceiling speaker
Frequency range	80 Hz to 16 kHz or better, -10 dB, half space

Nominal sensitivity	86 dB SPL, 1 watt, 1 m, half space
Nominal coverage angle	170° conical coverage
Power capacity	16 W (rms) continuous pink noise 32 W (rms) continuous program
<b>Wall Plate Transmitter with Audio Embedding</b>	
Signal Input Type	1 single link HDMI input
	1 female 15-pin HD (RGB)
Analog audio (over DTP)	2 stereo, unbalanced
Signal Output type	1 twisted pair (1 female RJ-45)
Maximum data rate	6.75 Gbps (2.25 Gbps per color)
Formats	RGB digital video
Resolution range	Up to 1920x1200 or 1080p @ 60 Hz; 8 bit color depth 2048x1080p @ 60 Hz (2K)
<b>10x8 4K Scaling Presentation Matrix Switcher</b>	
<b>Video Input</b>	6 HDMI digital video (HDCP compliant)
	4 or above twisted pair input
<b>Video Output</b>	4 HDMI digital video (HDCP compliant)
<b>Audio input</b>	
Number/signal type	6 stereo, analog line level, balanced or unbalanced
	6 stereo, de-embedded from HDMI (PCM only) 4 twisted (de-embedded from HDMI [PCM only] and remote balanced/unbalanced analog), or XTP (embedded digital)
<b>Analog audio</b>	
Nominal level	+4 dBu, -10 dBV adjustable via input gain
Maximum level	+21 dBu balanced, +15 dBu unbalanced
Input gain adjustment	-18 dB to +24 dB, 0.1 dB steps, adjustable per input
<b>Audio output - Power amplifier</b>	



Number/signal type	1 mono, 70 V
Load impedance	50 ohms minimum
Amplifier type	Class D
Output power	100 watts (rms) @ 70 V, 1 kHz, 0.1% THD
Frequency response	80 Hz to 20 kHz, +1/-3 dB @ 1 watt
THD + Noise	<0.1%, 1 kHz, 3 dB below clipping
S/N	>90 dB, 20 Hz to 20 kHz, unweighted
<b>Mic/line input</b>	
Number/signal type	4 mono, mic/line, balanced/unbalanced (with phantom power)
<b>Control Processor</b>	
<b>Serial control</b>	
Quantity/type	1 bidirectional RS-232, RS-422, RS-485 (port 1) 2 bidirectional RS-232 (ports 2 and 3)
Connectors	(1) 3.5 mm captive screw connector, 5-pole (2) 3.5 mm captive screw connectors, 3-pole
Baud rate and protocol	300 to 115200 baud (9600 baud = default); 8 (default) or 7 data bits; 1 (default) or 2 stop bits;
<b>Digital I/O control</b>	
Quantity/type	4 digital input/output (configurable)
Connectors	(1) 3.5 mm captive screw connector, 5-pole
<b>IR/Serial Control</b>	
Quantity/type	2 programmable: unidirectional RS-232 ( $\pm 5$ V), or TTL level (0 to 5 V) infrared (carrier and non-carrier) up to 300 kHz
Connector	(1) 3.5 mm captive screw connector, 5-pole
Baud rate and protocol (RS-232)	300 to 115200 baud (9600 baud = default); 8 (default) or 7 data bits; 1 (default) or 2 stop bits; no parity (default), even, odd, mark, or space parity
<b>Relay control</b>	

Quantity/type	4 normally open relays
Relay control connectors	(1) 3.5 mm captive screw connector, 6-pole
Relay control contact rating	24 VDC, 1 A
<b>VC System</b>	
Package	Full HD Codec, Microphone Array, cables, and remote control
Functions	Multipoint license for up to 8 sites at 720p30, or 4 sites at 1080p30
Video Standards and Resolutions	It should support H.323, SIP standards for communications.
	It should support H.261, H.263, H.264 AVC/ SVC, H.264 High Profile
	It should support 1080p 60 fps, 1080p 30 fps, 720p 60 fps and 720p 30fps
Content Standards and Resolutions	It should support content sharing using standard based H.239 and BFCP over SIP. It should also support audio from PC used for content sharing.
	It should transmit both people and content both simultaneously to the far end location at 1080p 30fps
Audio Standards and Features	It should support G.711, G.728, G.729A, G.722, G.722.1, AAC-LD or better
	It should support 20kHz or better bandwidth with crystal clear audio and stereo sound.
	Automatic Gain Control and Automatic Noise Suppression
	Keyboard noise reduction and instant adaptation echo cancellation
Video and Audio Inputs	1 x HDMI input for connecting PC/Laptop to share HD content
	1 x HDMI/Component for connecting VCR/DVD player
	2 x Microphone Input(Support for minimum 4 mics)
	2 x RCA line-in
Video and Audio Outputs	2 x HDMI output for connecting main monitor & second monitor.
	1 x HD output for connecting additional monitor or DVD recorder.

	1 x RCA pair stereo line-out
Other Interfaces	2 x 10/100/1000 LAN port
	2 x USB 2.0 for software upgrade and connecting external devices
	1 x RS-232 mini-DIN 8-pin
Network Features	H.323 and SIP bandwidth up to 6 Mbps
	IPv4 and IPv6 support from day one
	Auto Gatekeeper Discovery
	IP Precedence
	H.323 based Packet Lost Recovery
Multisite Feature	It should support atleast 4 sites at 1080p/ 8 sites at 720p
Security	Media Encryption (H.323, SIP): AES-128, AES-256
	The system should also support local recording of an encrypted call
	Authenticated access to admin menus, web interface and telnet API
	Local account password policy configuration
Other Standards	H224/H.281, H.323 Annex Q, H.225, H.245, H.241, H.239, H.243, H.460
	It should support native integration with on premise Lync server & SFB server.
	Auto sensing power supply
Warranty	3 Year
<b>Auto tracking camera</b>	
<b>Close-up Camera</b>	
Video System	1080p/60, 1080p/50, 1080i/60, 1080i/50, 1080p/30, 1080p/25, 720p/60, 720p/50, 720p/30, 720p/25
Sensor	1/2.7", CMOS, Effective Pixel: 2.07M
Scanning Mode	Progressive
Lens	12x, f3.5mm ~ 42.3mm, F1.8 ~ F2.8
Digital Zoom	16x (optional)

Minimal Illumination	0.5 Lux @ (F1.8, AGC ON)
Video S/N	≥55dB
Horizontal Angle of View	72.5° ~ 6.9°
Vertical Angle of View	44.8° ~ 3.9°
Horizontal Rotation Range	±170°
Vertical Rotation Range	-30° ~ +90°
Number of Preset	255
<b>Panorama Camera</b>	
Video System	1080p/60, 1080p/50, 1080i/60, 1080i/50, 1080p/30, 1080p/25, 720p/60, 720p/50, 720p/30, 720p/25
Sensor	1/2.7", CMOS, Effective Pixel: 2.07M
Scanning Mode	Progressive
Teacher Panorama Lens	f=6mm, F1.8, AoV about 60°(default, changeable)
Student Panorama Lens	f=3.6mm, F1.8, AoV about 95° (default, changeable)
Minimal Illumination	0.05 Lux @ (F1.8, AGC ON)
Shutter	1/30s ~ 1/10000s
Digital Noise Reduction	2D, 3D digital noise reduction
<b>Network Features</b>	
Video Compression	H.265 / H.264 / MJPEG
Frame Rate	50Hz: 1fps ~ 50fps, 60Hz: 1fps ~ 60fps
Audio Bit Rate	96Kbps, 128Kbps, 256Kbps
Support protocols	TCP/IP, HTTP, RTSP, RTMP, Onvif, DHCP, Multicast, etc.
<b>Input/Output Interface</b>	
HD Output	1xHDMI: Version 1.3 2x3G-SDI: BNC type, 800mVp-p, 75Ω, Along to SMPTE 424M standard

Network Interface	2xRJ45: 10M/100M Ethernet Interface
Audio Interface	1-ch: 3.5mm Audio Interface, Line In
USB	1xUSB2.0: Type A female jack
Communication Interface	1xRS232 In: 8pin Min DIN, Max Distance: 30m, Protocol: VISCA/Pelco-D/Pelco-P
	2xRS232 Out: 8pin Min DIN, Max Distance: 30m
	1xRS485: 2pin Phoenix Port, Max Distance: 1200m, Protocol: VISCA/Pelco-D/Pelco-P
Input Voltage	DC 12V
Power Consumption	18W (Max)
MTBF	>30000h
<b>80" Full HD LCD Display</b>	
Size	80-inch Widescreen
Max. Resolution	1,920 x 1,080 pixels, Full HD
Brightness	350 cd/m <sup>2</sup>
Contrast Ratio	5000:1 / 4,000,000:1 (Dynamic Contrast Ratio)
Viewing Angle (H/V)	176°/176° (CR ≥ 10)
Backlight	Direct LED
Response Time	4 ms
Active Screen Area	71.1" x 40.7"
Input Terminal	HDMI 1.4 X 3, USB X 1, Component x 1, Composite x 2, D-Sub x 1
Output Terminal	Optical, RCA L/R
Speaker Output	10 W + 10 W
Power Supply	100V – 240V AC, 50/60 Hz
Power Consumption	300 w
Operating Temperature	0°C to 40°C
Size	80-inch Widescreen
<b>Interactive Touch Overlay for 80" display</b>	
Touch Technology	Infrared

Number of Touch points	6
Size	80"
Thickness & Width	19.5 mm X 8.1 mm
Touch point accuracy	3.3 mm
Report Resolution	32767 X 32767
Power supply	USB powered , 500mA average while active
Frame color	Black powered coated ( Custom colors available upon request )
<b>HDCP-Compliant Annotation Processor</b>	
<b>Video input</b>	
Number/signal type	1 RGB, RGBcvS, component (interlaced, progressive, HD), S-video, composite video,1 HDMI (HDCP compliant),1 Display Port (HDCP compliant)
<b>Video processing</b>	
Decoder	12 bit digital (3D-adaptive comb filter)
Analog sampling	12 bits per color; 13.5 MHz standard (video), 170 MHz standard (RGB)
HDMI pixel data bit depth	8, 10, or 12 bits per channel; 165 MHz pixel clock
Display Port pixel data bit depth	8, 10, or 12 bits per channel; 270 MHz pixel clock
Colors	1 billion, (10 bit processing)
<b>Video output</b>	
Number/signal type	2 HDMI (HDCP compliant),1 twisted pair (HDCP compliant)
<b>Audio input</b>	
Number/signal type	1 embedded digital audio from HDMI,1 embedded digital audio from Display Port
<b>Audio output</b>	
Number/signal type	2 embedded digital audio on HDMI
<b>Twisted Pair Extender for USB Peripherals</b>	
USB Transmitter and Receiver is for Annotator to Display	

<b>USB host — Tx units</b>	
Number/signal type	1 USB
Connectors	1 female USB type B
<b>USB hub — Rx units</b>	
Number/signal type	(1) 4-port USB hub
Connectors	4 female USB type A
<b>H.264 Streaming Media Processor</b>	
<b>Input</b>	
Number/signal type	3 HDMI digital video (HDCP compliant), 1 component video (Y, R-Y, B-Y; interlaced, progressive, HD), or composite video
Connectors	4 female HDMI type A, 3 inputs and 1 loop-through 3 female BNC; component video, composite video
Analog sampling	12 bits per color, 13.5 MHz standard (low resolution video), 165 MHz standard (RGB, YUVp, DVI)
Digital sampling	4:2:2, 8-bits per color
Digital processing	
Bit rate	200 kbps to 10 Mbps
Latency	130 msec* (encode), 600 msec* (encode/decode)
<b>Video output</b>	3 H.264/AVC digital video over Ethernet 1 HDMI digital video (HDCP compliant)
Frame rate	Up to 30 fps for all output rates
Formats	H.264/AVC (Profile type: High, Main, Baseline. Profile level: 4.1, 4.0, 3.2, 3.1, 3.0
<b>Recording and storage</b>	
Resolution	Same as primary streamed resolution: 480p, 720p, 1080p, 512x288, 1024x768, 1280x1024, custom
Recording frame rate support	Same as primary streamed frame rate, up to 30 fps for all output rates

Internal storage capacity	400 GB (400 GB for recording files)
External USB ports	1 (front panel), 1 (rear panel), USB 2.0 (Each port is current limited to 1.5 A.)
Background image format	PNG
<b>Audio input</b>	
Analog	
Number/signal type	Ch. A: 1 stereo, balanced or unbalanced, with loop-through Ch. B: 1 stereo, balanced or unbalanced, or 2 mono, unbalanced
<b>Digital</b>	
Number/signal type	3 stereo, digital de-embedded from HDMI 1 loop-through from HDMI
Impedance	>10k ohms unbalanced, >20k ohms balanced
Nominal level	+4 dBu (1.23 Vrms), -10 dBV (316 mVrms), adjustable via input gain
Maximum level	+18 dBu, (balanced or unbalanced)
CMRR	>70 dB @ 20 Hz to 20 kHz
Input gain adjustment	-18 dB to +24 dB, 1 dB steps, adjustable per input
<b>Audio output</b>	
Number/signal type	1 stereo, balanced/unbalanced and 1 stereo, HDMI (re-embedded local preview)
USB configuration ports	1 front panel female mini USB B
Mouse and keyboard port	2 rear panel USB type A
USB standards	USB 1.1, USB 2.0, high/full/low speed hosts
Serial control port	1 bidirectional RS-232, rear panel 3.5 mm captive screw connector, 3-pole
Baud rates	9600 (default), 19200, 38400, 57600, 115200
Streaming	
Power supply	Internal Input: 100-240 VAC, 50-60 Hz
Power consumption	30 watts typical



<b>Wireless Collaboration Gateway</b>	
Video output	1 HDMI , 1 RGBHV
Output resolution	800x600 @60Hz, 1024x768 @60Hz, 1280x720 @60Hz (720p) (default), 1280x768 @60Hz, 1280x800 @60Hz, 1360x768 @60Hz, 1440x900 @60Hz, 1600x1200 @60Hz, 1920x1080 @30Hz (1080i), 1920x1080 @60Hz (1080p)
Audio Output	1 digital, 2-channel PCM 1 analog stereo, unbalanced
Ethernet data rate	10/100/1000Base-T, half/full duplex with auto detect
USB PORTS	
Number/signal type	3 high-speed USB 2.0
Connectors	3 USB type A connectors
USB standards	USB 2.0, USB 1.1, USB 1.0 compatible
Operating systems	Windows® XP/7/8, Mac® OS X (10.7-10.10)
<b>Interactive Pad with Wifi 16GB Space Gray with docking station</b>	
<u>Type</u>	LED-backlit IPS LCD, capacitive touch screen, 16M colors
Size	9.7 inches (~71.6% screen-to-body ratio)
Resolution	1536 x 2048 pixels (~264 ppi pixel density)
Multitouch	Yes
Protection	Scratch-resistant glass, oleo phobic coating
<b>Dimmable Lighting</b>	
Dimmable down light	
Remote Technologies Incorporated Xp-3 Central Processor with 3 IR,1 RS232, 2Relays, 2 Sense port with 1 viewer license	
License	
Power supply 1x 30V DC + 1x 24V DC	
DALI gateway	

Interface	
Berker R.1 touch sensor 3gang with thermostat, glass Black	
<b>Server for Both Storage and Streaming</b>	
HPE DL180 Gen9 E5-2620v4 LFF IN Svr/Prom	
Intel® Xeon® E5-2620v4 (2.1GHz/8-core/20MB/85W)	
16 GB DDR4-2400 R Memory(2 Qty )	
12 LFF(3.5inch) Hot Plug Drive	
HP Smart Array P840 4GB controller	
HPE 2TB 12G SAS 7.2K rpm LFF (3.5-inch) SC Midline 3yr Warranty Hard Drive(6 Qty)	
Support via external USB	
Hot Plug  Hot Swap	
2 x HP 900W AC 240VDC Power Module(2 Qty )	
HPE Ethernet 1Gb 2-Port 361i Adapter	
HP iLO (Firmware: HP iLO 4)	
3 Yrs. 24x7 4Hr Support	

**SECTION : 4 - PRICE SCHEDULE**

**To be used by the bidder for submission of the price bid**

1. Component Name:
2. Specifications (confirming to Section 3 of Tender document-enclose additional sheets if necessary):
3. Currency and Unit cost (excluding Taxes):
4. Quantity:
5. Item cost (Sl.No.3 \* Sl.No.4) (in Indian Rupee):
6. Taxes and other charges:
  - (i) Specify the type of taxes and duties in percentages and also in figures
  - (ii) Specify other charges in figures
7. Total cost (Inclusive of all taxes) :
8. Warranty period (confirming to the Section 3 of Tender document. This should be mentioned in Technical bid also in order to get qualified for price bid):
9. Delivery Schedule (confirming to the Section 3 of Tender document):
10. Name and address of the firm for placing purchase order:
  
11. Name and address of Indian authorized agent (in case of imports only):

**Signature of the Bidder :** .....

**Name and Designation :** .....

**Business Address :** .....

**Place :**

**Date :**

**Seal of the Bidder's Firm**

(Note: All column should be filled. No column should be left blank. If any column is not filled-in properly or left empty then the bid will be rejected.)

**SECTION : 5 - CONTRACT FORM**

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**To be provided by the bidder in their business letter head**

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[Name of the Supplier's Firm] hereby abide to deliver the .....by the delivery schedule mentioned in the Section 3 of the Tender document for supply of the items if the purchase order is awarded.

The item will be supplied conforming to the specifications stated in the tender document without any defect and deviations.

Warranty will be given for the period mentioned in the tender document and service will be rendered to the satisfaction of NIT Puducherry during this period.

**Signature of the Bidder :** .....

**Name and Designation :** .....

**Business Address :** .....

**Place :**

**Date :**

**Seal of the Bidder's Firm**

# NATIONAL INSTITUTE OF TECHNOLOGY PUDUCHERRY

## Annexure-A

### MODEL PRICE BID FORMAT FOR INDIAN BIDDERS

Tender No. & Date:

Bidder's Offer No. & Date:

Sl. No	Item Description for a room of 60 capacity	Preferred Make	Quoted Brand/Make	Unit (SET /No)	Qty	Rate /Qty in Rs. (excluding of all taxes)	ED in %	VAT/ CST In %	Service Tax in %	Total Value in Rs. (inclusive of all taxes)
	<b>Audio System</b>									
1	Wireless handheld	Shure /Sennheiser /Beyerdynamics / RCF			2					
2	Wireless Lapel Microphone	Shure / Sennheiser /Beyerdynamics / RCF/			1					
3	Mono 70 Amplifier - 200 Watts	RCF / Bose /Renkus Heinz /Camco / PowerSoft/ Extron			1					
4	3" full range flat field Ceiling loudspeaker - Paired	RCF / Bose /Renkus Heinz /Martin Audio /L-Acoustics /EAW /Extron			3					
	<b>Switching system</b>									
5	Two Input DTP Transmitter for HDMI and VGA with Audio Embedding	Extron /Crestron /Kramer /AMX			1					
6	10x8 Seamless 4K Scaling Presentation	Extron /Crestron /Kramer			1					

	Matrix Switcher	/AMX								
	<b>VC System</b>									
7	Group 700 CODEC ONLY SKU (no camera, microphone array, power cord) - 720p, NTSC/PAL. Includes remote control and 2 cables: 1.8m HDMI, 3.6m CAT 5E LAN. CALA includes Service in price. ROW require purchase of separate Service Product ID.	Polycom/Cisco/Peoplelink			1					
8	Partner Premier, One Year, CODEC ONLY. Real Presence Group 700 HD codec -720p	Polycom/Cisco/Peoplelink			1					
9	Group Series 1080p HD License-1080 encode/decode for people and content. Valid for Group 300, 500, 550, 700	Polycom/Cisco/Peoplelink			1					
10	Group Series and Centro Multipoint License. 6-way on Group 500, Group 550, and Centro. 8-way on Group 700.	Polycom/Cisco/Peoplelink			1					
11	Auto tracking camera (VHD)	Polycom/Cisco/Peoplelink			2					
	<b>Display &amp; Interactive System</b>									
12	80 inch Class FULL HD LCD Display with wall mount kit	Panasonic/Sharp/SONY/LG/SAMSUNG /EIS/ Extron/ Apple			2					
13	Interactive Touch Overlay for above 80" display				1					

14	HDCP-Compliant Annotation Processor with DTP Extension				1					
15	Twisted Pair Extender for USB Peripherals				1					
16	H.264 Streaming and recording processor				1					
17	Wireless Collaboration Gateway				1					
18	Interactive Pad Air 2 Wifi 16GB Space Gray				1					
19	Server for Both Storage and Streaming				1					
<b>Dimmable downlight</b>										
20	Dimmable downlight				20					
21	RTI XP3 Remote Technologies Incorporated Xp-3Central Processor with 3IR,1Rs232,2Relays, 2 Sense port with 1 viewer license	Philips/ RTI/ Hager			1					
22	License				1					
23	Power supply 1x 30V DC + 1x 24V DC				1					
24	DALI gateway				1					
25	Interface				1					
26	Berker R.1 touch sensor 3gang with thermostat, glass Black					1				

	<b>AV Cables</b>									
27	Av includes HDMI, VGA, Audio & Speakers	<b>Klotz / Sommer /Canare / Extron</b>			1					
	<b>Head End System</b>									
28	Closed Equipment Rack	<b>Reputed</b>			1					
29	Installation, Testing, Commissioning & Programming Charges	<b>Reputed</b>								
30	Installation, Testing and Commissioning for Server and lighting	<b>Reputed</b>								
31	Packing & Forwarding charges (extra, if any)									
32	FOR Dispatching station value in Rs.									
33	Freight & Transit insurance charges, extra, if any									
34	Total all inclusive price delivered, installed and commissioned at NIT Puducherry									
35	<b>Net cost to be paid by NIT Puducherry</b>									

Signature & Seal of Vendor

Note: The price bid should be submitted only as per the above format. No row shall be left blank. Please indicate NA, in case the item is "Not Applicable". If this format is not used or any column is left blank, then the bid will be rejected.