

# TENDER DOCUMENT FOR SETTING OF VIRTUAL CLASS ROOM

TENDER NOTICE NO. : VCR-3/12

DATE & TIME OF ISSUE: 25<sup>th</sup> January 2012  
LAST DATE FOR RECEIPT OF TENDER: 16<sup>th</sup> February 2012 up to 3PM  
DATE & TIME OF OPENING TENDER: 16<sup>th</sup> February 2012 up to 4PM

NAME AND ADDRESS OF TENDERER : Registrar  
Panjab University  
Chandigarh 160014

## TENDER PURCHASE DETAILS:

- i. In cash: Rs. 500/- (Amount deposited in the Account of Registrar, Panjab University, Chandigarh)
- ii. Rs. 500/- (If the Tender Downloaded from internet) Demand Draft No. \_\_\_\_\_ date \_\_\_\_\_ in favor of the Registrar, Panjab University, Chandigarh..
- iii. Rs. 600/- by Demand Draft No. \_\_\_\_\_ dt. \_\_\_\_\_.  
Name of Bank : \_\_\_\_\_ Amount \_\_\_\_\_ (if required by post) in favor the Registrar, P.U. Chandigarh.

## EARNEST MONEY DETAILS:

- (i) Rs 50,000/- By Demand Draft\* No. \_\_\_\_\_ dated \_\_\_\_\_.  
Name of Bank \_\_\_\_\_

\*In favor of The Registrar, P.U. Chandigarh.The Registrar PANJAB UNIVERSITY, CHANDIGARH.

[Website : tenders.puchd.ac.in]

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***PRICE Rs. 500***

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## **SECTION – I**

### **1. Invitation for Bids**

- 1.1 The university proposes to setup virtual Class room System to be used at Panjab University, Chandigarh in at constituent colleges. The Panjab University is looking for System Integrator (SI)/tenderers on turnkey based solution for setting up of Virtual Class Room.
- 1.2 System Integrators/tenderers are advised to study all technical and commercial aspects, instructions, forms, terms and specifications carefully in the tender document. Failure to furnish all information required in the Tender Document or submission of a bid not substantially responsive to the Tender document in every respect will be at the tenderer's risk and may result in the rejection of the bid.
- 1.3 Sealed offers prepared in accordance with the procedure enumerated in Clause 1 of Section II should be submitted to The Registrar, Panjab University, not later than the date and time laid down, at his address given in the schedule for invitation to Tender under Clause 1.26 of Section I.
- 1.4 All bids must be accompanied by a bid security of Rs. 50,000/- in the form of Bank Draft / Bankers Cheque drawn from a scheduled bank in favour of the Registrar, Panjab University, Chandigarh, payable at Chandigarh.
- 1.5 This tender document is not transferable.
- 1.6 The categories of items and quantity indicated in the Tender Document are tentative, PU reserves the right to increase or decrease the quantity or delete some or all of the items depending on the needs of the Department/University without assigning any reasons.
- 1.7 The tenderer should indicate specifically the Basic Price, Taxes/Excise duty, other duties (if any), and levies chargeable quantitatively against each item. No additional information will be entertained after due date.
- 1.8 The bids should indicate clearly that the rates are F.O.R. destination, P.U., Chandigarh.
- 1.9 The tender should be submitted in Two cover system i.e. a and b. There should be proper indication of the contents on each envelope as indicated in clause 1.1 of section II.
- 1.10 A photocopy of the receipt of Earnest Money. The draft must be in a separate sealed envelope indicating the amount, tender Notice Number and due date and enclosed with the bid.
- 1.11 The tenderer should clearly indicate the delivery period and validity period of tender.
- 1.12 The tenderer should clearly indicate the availability of service and maintenance facilities at Chandigarh for the items quoted.

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- 1.13 The above mentioned details particularly the Sales Taxes/excise duty, any other duty, if not quoted properly, the bid can be cancelled.
- 1.14 **The tenderers are required to quote for each item separately in terms of basic price and all other charges.** Prices be quoted in Indian Currency only.
- 1.15 The Tender should be submitted along with refundable Earnest Money of Rs.50,000/- in the shape of Term Deposit/Call Deposit Receipt valid for a period of 6 months in favour of The Registrar, PU, Chandigarh. Tenders not accompanied by Earnest Money or incomplete in any respect will be rejected outright.
- 1.16 The Tender must be submitted along with the copies of :
- Last 2 Financial Year Income Tax Return
- 1.17 The Panjab University reserves the right to reject any or all tenders without assigning any reason whatsoever.
- 1.18 The tenders will be opened on the date and time indicated in the presence of tenderers, if any present on the occasion. If the date of opening is declared to be a holiday the tenders will be opened on the next working day.
- 1.19 **No advance payment or payment against Performa invoice will be made. Payment will be made after receipt, inspection, installation/testing of equipments/computers/scanners.**
- 1.20 All damaged or unapproved goods shall be returned at the Tenderer risk and cost and the incidental expenditure there-upon shall be recovered from the concerned party.
- 1.21 Printed conditions of the firm sent along with the quotation, if any, shall not be binding on us.
- 1.22 Packing list must be put in all packages.
- 1.23 On acceptance of tender, the date of delivery should be strictly adhered to otherwise; PU reserves the right not to accept the delivery in full or in part. In case the order is not executed within the stipulated period, PU will be at liberty to make purchases through other sources, and to forfeit the earnest money of the Tenderer.
- 1.24 No claim on account of payment of Octroi etc. within the limits of the Municipal Corporation, Chandigarh shall be accepted.
- 1.25 Payment of bill will be made through by crossed account payee Cheque drawn on the State Bank of India, Panjab University, Chandigarh. The decision to purchase each item is taken independent of other items quoted by the firm. It is not binding on the University/department to purchase all the items quoted by any particular firm.
- 1.26 Schedule for Invitation to Tender**

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- a) Address at which tender is to be submitted:  
The Registrar  
Panjab University,  
Chandigarh.
- b) Latest time and date for receipt of Tender: Place, Time and Date of opening of Technical bids:
- Place: Office of Registrar  
Panjab University, Chandigarh.
- c) Time & Date:  
Date till which the tender is valid:  
180 days from the opening of technical bid.  
Installation of whole equipment will be within 8 weeks after the allotment of tender.
- d) Panjab University shall not be responsible for any postal delay about non-receipt/non-delivery of the documents.

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## **SECTION – II**

### **1. Procedure for submission of Bids**

- 1.1 It is proposed to have a Two Cover System for this tender
  - a) Technical Bid (in duplicate) in one cover.
  - b) Commercial bid (in duplicate) in one cover.
- 1.2 Each copy of Technical Bid of the Tender should be covered in a separate sealed cover super scribing the wordings “Technical Bid”. Each copy should be marked as “Original Copy” and “First Copy”. Both should be put in a single sealed cover super scribing the wordings “Technical Bid”.
- 1.3 Each copy of Commercial Bid of the Tender should be covered in a separate sealed cover super scribing the wordings “Commercial Bid”. Each copy should be marked as “Original Copy” and “First Copy”. Both should be put in a single sealed cover super scribing the wordings “Commercial Bid”. Commercial Bid should only indicate prices (Preferably item-wise).
- 1.4 All the two documents viz. Technical Bid Cover and Commercial Bid Cover prepared as above are to be kept in a single sealed cover super scribed with  

**“Virtual Class Room”**
- 1.5 The cover thus prepared should also indicate clearly the name and address of the tenderer to enable the Bid to be returned unopened in case it is declared “late”.
- 1.6 A photocopy of the received of Earnest Money, if paid in cash, must be enclosed along with the Tender. In case the Earnest Money is paid by Demand Draft, the draft must be in a separate sealed envelope indicating the amount, tender Notice Number and due date and enclosed with the bid.

### **2. Cost of Tender**

The tenderer shall bear all costs associated with the preparation and submission of its Bid, including the cost of presentation for the purpose of clarification of the bid, if so desired by the client and the client will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the Tendering Process.

### **3. Clarification of Tender Document**

A prospective tenderer requiring any clarification of the Tender Document may notify the client in writing at the Client’s mailing address indicated in Clause 1.26 of Section I. The Client will respond in writing to any request for clarification of the Tender Document,

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received not later than 07 working days prior to the last date for the receipt of bids prescribed by the Client. In case of any further clarification on any of the points in the tender, if required, a meeting can be held.

#### **4. Amendment of Tender Document**

4.1 At any time prior to the last date for receipt of bids, the client may for any reason, whether at its own initiative or in response to a clarification requested by a prospective Tenderer, modify the Tender Document by an amendment.

4.2 The amendment will be notified on website of the university [tenders.puchd.ac.in](http://tenders.puchd.ac.in).

4.3 In order to afford prospective Tenderers reasonable time in which to take the amendment into account in preparing their bids, the Client may, at its discretion, extend the last date for the receipt of the Bids.

#### **5. Language of Bids**

The bids prepared by the Tenderer and all correspondence and documents relating to the bids exchanged by the Tenderer and the Client, shall be written in English language, provided that any printed literature furnished by the Tenderer may be written in another language so long as accompanied by an English translation in which case, for purposes of interpretation of the bid, the English translation shall govern.

#### **6. Documents comprising the Bids**

6.1 The Bids prepared by the Tenderers shall comprise of following components: -

- a) Technical Bid shall consist of the following: -
  - (i) Technical Bid furnished as per the format for technical bid (Section III).
  - (ii) Technical literature for each product/service, covering full technical specifications.
  
- b) Commercial Bid consisting of the following: -
  - (i) Bid prices duly filled, signed and complete as per the format (Clause 3 of Section III).
  - (ii) Maximum educational discount as could be offered should be mentioned.

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## **SECTION III**

### **REQUIRMENTS**

#### **3.1 UNDERSTANDING THE REQUIREMENT**

**Creation of virtual class rooms at PU under 11<sup>th</sup> Five year Plan.** PU wants to deploy High definition Video-conferencing system based Virtual class room set up with various other related AVSI equipments at PU. This they want to facilitate remote class room trainings & lectures for better decimation of knowledge.

#### **SCOPE OF WORK**

- Within the scope of work, the vendor will perform a detailed requirement analysis along with PU officials to understand the requirements. As per the present understanding, detailed Bill of material for 25 seaters class rooms is required.
- System Integrator will submit requirement of the IP Connectivity and power supply.
- System Integrator will carry out implementation at the PU.

With expertise on the field of Audio/video integration and proposed VC with AVSI solution the state-of-art solution be setup.

Three different modes are expected out at PU

- 1 **LOCAL TEACHING:** This mode will be used for delivering lectures to local students who are physically present in the class room along with the teacher like any other regular class room.
- 2 **DISTANCE LEARNING:** Proposed virtual class room in this mode will be used for remote class room sessions when no teacher is physically available in the class. The students will get the virtual lecture from distant teacher will all features of local class.
- 3 **DISTANCE & LOCAL LEARNING:** This mode of virtual class room, teacher would teach the local students and of remote simultaneously. Remote students will be part of this physical class with complete interactivity.

#### **PRE QUALIFICATION CRITERIA**

- 1) The Bidder should have minimum turnover of 20 Crores for the last three years.
- 2) The Bidder must have executed at least 3 Virtual classrooms in reputed educational institutes, proof of which need to be submitted.
- 3) The bidder must produce at least 3 order copies worth 10 lakhs or more regarding Virtual classroom.
- 4) Authorization from Manufactures or dealers should be duly submitted.
- 5) The bidder should have their office in Chandigarh/Punjab.
- 6) The bidder should be in existence from the last 5 years.

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## TECHNICAL SPECIFICATION

S. No	Equipment	Preferred Model No./Make	Features	Qty
1.	<b>Video Conferencing Systems</b>	<b>Cisco Tandberg</b>	<ul style="list-style-type: none"> <li>- 19" rack-mountable codec</li> <li>- Expandability for future applications</li> <li>- Inbuilt PRI/BRI Gateway</li> <li>- Multipoint enabled from day one 1+5</li> <li>- Dual DVI/XGA with VESA Power Management</li> <li>- Integrator Package available that includes: 6000 MXP Codec, Precision HD Camera, microphones, trackers and cables</li> <li>- Powerful live presentations through one-step PC plug-in or LAN connection</li> <li>- View presentations and presenter simultaneously with DuoVideo and H.239 Dual Stream</li> <li>- Choice of Network: up to 2 Mbps ISDN or external network (H.320)/ 4 Mbps IP (H.323 or SIP)/ 6 Mbps in Multisite</li> <li>- Superior video quality incorporating the H.264 standard</li> <li>- True CD-quality audio</li> <li>- Multipoint License 1+5</li> </ul>	1
2.	<b>Desktop based Video Conferencing Systems</b>	<b>Cisco Tandberg</b>	<p><u>Components:-</u> Fully integrated unit including:</p> <ul style="list-style-type: none"> <li>● Codec</li> <li>● Display</li> <li>● Camera</li> <li>● Microphone and loudspeakers</li> <li>● Cables including: DVI-I-to-VGA cable, DVI-D cable, 3.5-mm jack audio cable, LAN cable, power adapter, and power cable</li> </ul> <p><u>Display:-</u> 24-in. LCD monitor</p> <ul style="list-style-type: none"> <li>● Resolution: 1920 x 1200 (16:9)</li> <li>● Contrast ratio: 1000:1</li> <li>● Viewing angle: 160°</li> <li>● Response time: 5 ms</li> <li>● Brightness: 300cd/m2</li> <li>● 5° - 15° tilt</li> </ul> <p><u>Touch Screen</u> :- 8 inches touch screen interface</p> <p><u>Camera</u></p> <ul style="list-style-type: none"> <li>● Resolutions: 1080p30 and 720p60</li> <li>● Auto focus</li> <li>● Integrated privacy shutter</li> <li>● Document camera mode</li> <li>● Multicoated all-glass optics</li> <li>● 1/3-in., 2.1 megapixel CMOS sensor</li> </ul> <p><u>Bandwidth:-</u> H.323/SIP up to 6 Mbps point-to-point</p>	1

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			<p><u>PC and second source video input</u></p> <p>DVI-I</p> <p>EX90: HDMI In.</p> <p><u>MULTIPOINT License 1+3 enabled from Day one</u></p>	
3.	<b>LED Monitors/TV</b>	<b>32" and 55" LG/SONY</b>	<ul style="list-style-type: none"> <li>- Native resolution of 1920x1080 pixels.</li> <li>- Built-in audio amplifier for 8W RMS power with speakers.</li> <li>- Easy to use infrared Remote Controller.</li> <li>-</li> </ul>	3
4.	<b>HD Projector</b>	<b>SHARP/HITACHI/CHRISTIE</b>	<ul style="list-style-type: none"> <li>- High Definition standard HD 720p with native resolution of 1280x720</li> <li>- Brightness of 4000 ANSI Lumens.</li> <li>- Image inversion &amp; keystone adjustments for ceiling mount operations.</li> <li>- Serial control port for integrating with external control sys</li> <li>- Easy to use infrared Remote Controller.</li> </ul>	1
5.	<b>HD Visualizer</b>	<b>LUMENS</b>	<ul style="list-style-type: none"> <li>- Pickup camera should have native resolution of 720p.</li> <li>- Shooting/Capture area of minimum A4 size.</li> <li>- Able to display documents and 3-D objects.</li> <li>- 10 X optical zoom.</li> <li>- Auto/Manual white balance.</li> <li>- Auto/Manual focus adjustment.</li> <li>- Provision to store snapshot of documents which can be later converted into PDF/JPEG format.</li> </ul>	1
6.	<b>Interactive LCD Writing Panel</b>	<b>HITACHI</b>	<ul style="list-style-type: none"> <li>- 15" Diagonal active area.</li> <li>- Native Display resolution of SXGA(1280x1024)</li> <li>- Able to write, draw and annotate over any running application.</li> <li>- Work with Laptops having Windows XP, Vista and Macintosh OS.</li> </ul>	1
7.	<b>DSP Audio Mixer</b>	<b>NEXIA VC</b>	<ul style="list-style-type: none"> <li>- Digital Signal Processor based 8 channel Audio mixers.</li> <li>- Built in Echo-cancellation/Noise Suppression.</li> <li>- 1 line level input.</li> <li>- 2 microphone/line outputs.</li> <li>- Serial/Ethernet control port for integrating with external control system.</li> </ul>	1
8.	<b>Wired Microphones</b>	<b>BOSCH</b>	<ul style="list-style-type: none"> <li>- Omni Directional Boundary microphone to be fixed in the table.</li> <li>- Separate Mute and Un-mute switch/button.</li> <li>- Good Frequency response of 50Hz-15KHz with good signal to noise ratio (typically 60dB or more at 1 KHz)</li> </ul>	2
9.	<b>CEILING Microphones</b>	<b>BOSCH</b>	<ul style="list-style-type: none"> <li>- Good Frequency response of 50Hz-15KHz with good signal to noise ratio (typically 60dB or more at 1 KHz)</li> </ul>	6
10.	<b>Wireless Handheld</b>	<b>BOSCH</b>	<ul style="list-style-type: none"> <li>- Good Frequency response of 50Hz-15KHz with good signal to noise ratio (typically 60dB or more</li> </ul>	1

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	<b>Microphone</b>		at 1 KHz)	
11.	<b>Wireless Collar Microphone</b>	<b>BOSCH</b>	- Good Frequency response of 50Hz-15KHz with good signal to noise ratio (typically 60dB or more at 1 KHz)	2
12.	<b>Multichannel Amplifier</b>	<b>BIAMP</b>	- High fidelity multichannel audio amplifier with minimum 8 line level/microphone input channels. - 230V, 50 Hz operation.	1
13.	<b>Integrated control System</b>	<b>Crestron</b>	- Touch screen with 15" color display - Minimum six number of serial ports. - Minimum eight number of Infrared remote control ports with IR probes. - Minimum eight number I/O ports. - Minimum eight number of Relay ports for ON/OFF contacts.	1
14.	<b>Video Mixer</b>	<b>Kramer</b>	- Provision to mix any two video inputs (High Definition, Standard Definition and RGB inputs) for various effects including Picture-in-Picture(PIP)/Picture-and-Picture(PAP) on output. - Provision to preview output video. - Logo Generator. - Character generator for tilting.	1
15.	<b>VGA Distribution Amplifier</b>	<b>Kramer</b>	- VGA distributor should support SXGA (1280x1024) or better resolutions. - 1 D-Sub 15 pin (RGB) input. - 4 number of D-Sub 15 pin (RGB) outputs. - Signal should not get annotated at the outputs.	1
16.	<b>VGA Matrix Switcher</b>	<b>Kramer</b>	- Support SXGA(1280x1024) or better resolutions. - 4 number of D-Sub 15 pin (RGB) input. - 4 number of D-type 15 pin (RGB) outputs. - Serial control port for integrating with external control system.	1
17.	<b>HDMI switcher</b>	<b>Kramer</b>	- 4 DVI/HDMI interface to support 720p resolution along with audio inputs. - 4 DVI/HDMI interface to support 720p resolution along with audio outputs. - Automatic input signal equalization to compensate for signal degradation due to long cable or weak sources. - Serial control port for integrating with external control systems.	1
18.	<b>HDMI/DVI extender</b>	<b>Kramer</b>	- Extend the DVI/HDMI signal over pair of CAT 5e/6 cables.	3
19	<b>Additional High Quality Microphone</b>	<b>Cisco Tandberg</b>	- Additional OMNI Directional microphone for VC	1
20	<b>42 U Rack with accessories</b>	<b>Valrack/Standard</b>	- 42 U Rack with 20 power points 5 Amp	1
21	<b>IP Conferencing</b>	<b>Cisco Tandberg</b>	Video Standards - H.261, H.263, H.263+, H.263++, H.264, MPEG-1,	1

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	<b>recorder</b>		<p>MPEG-4</p> <ul style="list-style-type: none"> <li>- H.323 Recording ports no- 5, play back ports – 10, with 150 hours of high quality recording and 600 hours of low quality recording</li> <li>- Inbuilt firewall</li> </ul> <p>Protocols H.323 v4, H.239 (dual video), ftp, Telnet, RTP, RTSP, HTTP, DHCP, SIP</p> <p>Bandwidth From 128kbit/s to 2 Mbit/s</p> <p>Audio Standards G.711, G.722, G.728, G.729, MPEG-1 layer II</p>
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### SOLUTION MUST HAVE

**High quality Audio and Video:** Systems should be able to give a good quality video. They provide high frame rate of 30 Frames per Second at bandwidth as low as 192 Kbps. This is very important, as you will get good clarity and motion on even low bandwidths. This is especially a must in a Multi-conference call, where the total available bandwidth gets divided between the individual sites. What the users get is the feeling of having a real life meeting owing to the high clarity Video and audio. No longer will they feel strained due to poor audio and video during a video meet and will want to meet more on video rather than traveling to meet.

Also the support for ***H.264 compression standard*** ensures that you will get very high quality video even on lower bandwidth. Thus you can save on the ISDN Line costs also.

**High Quality Audio:** The systems offer the latest audio compression—G722.1 that gives good audio quality on low bandwidths. The system should also gives CD quality audio using the MPEG 4 based ITU standard for CD quality—**AAC-LD**. The **Advanced Audio Coding –Low Delay** gives the user of being in the same room as the other site by compressing full 20 KHz audio. The stereo audio output along with the AAC-LD audio compression gives the user the opportunity to get a real life sound when doing multimedia presentations e.g. a DVD/VCR presentation.

**Inbuilt IMUX and BONDING:** Systems must have an ***inbuilt*** Inverse-Multiplexer which allows you to connect multiple ISDN BRI lines to the VC system directly. The superior hardware and software automatically does the BONDING of multiple ISDN lines to give you an aggregate bandwidth. This means more ***reliability*** and flexibility in making video calls since the system itself does the bandwidth aggregation and does not clutter your Conference room with unnecessary pieces of hardware and extra points of failure.

**DVI Connectors to Connect Display Devices and PC Input:** The Digital Video Interface connectors ensure greater picture clarity and better flexibility in connecting display devices. Most of today’s display such as Plasma screens, Video walls, Projectors etc. uses DVI connectors. The advantage of good resolution and digital format of the DVI connectors makes it the correct choice for connecting the display driver and the display unit. The DVI connectors also offer **VESA**

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power management and **EDID** (Extended Display Identification Data) that ensures that correct video format is used and power management such as DPMS (Digital Power Management Standard) ensures that the life of the display is also increased.

**Down Speeding:** ISDN lines, which act, as communication links for Videoconferencing are susceptible to fluctuations, with supplied system these fluctuations would not disconnect your video meet. The Down speeding feature the video call will down speed to the available bandwidth even if any of the B- channels drop - including even the first B channel. This will ensure that you can conduct uninterrupted video meetings.

**IP, Capability:** Considering the savings on cost and the flexibility that IP offers it is forecasted that in the near future IP would be the dominant carrier for Voice, Video and Data, with support for features like RSVP, NAT, QOS and implementations like IPLRTF. The system provides by the SI should offer high quality meeting solutions on IP. In fact the system should work closely with IP experts like Cisco to develop functionalities, which would give robust performance even on non-guaranteed networks like IP.

**ENDPOINT AGNOSTIC MCU and Management Server:** The MCU and centralized management software is endpoint agnostic

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## **SECTION - IV**

### ***TERMS AND CONDITIONS***

1. The company should adhere with all seriousness to the time schedule provided by the Panjab University.
2. The products asked for should be of very high standard and of reputed company with authorized service provider in Chandigarh. Mutual trust and nature of services provided should motivate the service provider to give more than what is asked for in the agreement.
3. All the rates will be F.O.R, Panjab University, and Chandigarh.
4. The Company shall be liable to indemnify the Panjab University in all respects and meet and pay off the litigation expenses and all the liabilities including damages, sums etc. arising out of and as a consequence of the negligence, deficiencies, mistakes, lapses, delays etc. in the execution of the various jobs and the services provided.
5. The company should ensure quick back up response in case of equipment failure which should be replaced if needed within 24 hours of the distress call.
6. There is no provision for making advance payment to the Company as per Panjab University rules. However, the running bills for the jobs completed can be submitted by the company and will be cleared for payment within reasonable period.
7. Send a copy of the profile of the company along with the costumers' satisfaction report.
8. Attach detail of the product with model number. Each product will have at least one year warranty even if not asked for within Punjab.
9. All the products must reach the university within 15 days of the date of the purchase of order.
10. University has right to levy penalty for delay in service/supply.
11. The SI/Tenderers will submit 5% guarantee money of the complete solution.
12. 3 Year on-site maintenance of equipment/solution provided by SI/Tenderers.
13. SI/Tenderers will provide training for the equipment and the software supplied and involved the PU official while implementation of the solution.

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14. SI/Tenderers will be provide resident engineer for minimum 6 months to sought out teething problems and technical support and training.