NOTICE INVITING QUOTATION (NIQ)

Date: 12/02/2015

Sealed quotations for setting up of Video Conference Facility at TRIPP Conference Room. The quotation must provide detailed information of the configuration and specifications of the items as well as price and terms and conditions of the payment. The quotation should mention the total cost of equipment, delivery, installation and commissioning and demonstration at IIT Delhi site. The quotation should be submitted on or before 2nd March 2015 by 5:00 PM in the office of the Coordinator, TRIPP, Room No. MS 815, Main Building, Indian Institute of Technology Delhi, Hauz Khas, New Delhi - 110 016 (INDIA). The validity of the submitted quotation must extend up to at least three months. Interested parties are required to submit their technical and financial bids in separately sealed envelopes and marked respectively as "Technical Bid" and "Financial Bid" on the outside. The two envelopes should be enclosed inside a single large envelope and marked, "ATTN: Prof. Geetam Tiwari, Sealed Quotation for VIDEO CONFERENCE FACILITY AT TRIPP to be opened by Purchase Committee".

Technical Specifications of Video Conferencing System

1	VIDEO	
a	Signal system	The system should support PAL and should be a point-to-point system with codec, Full High Definition 1080p camera with a minimum of 10xzoom, MIC, remote control, cable and power supply.
b	Standards and protocol	H.263, H.264 or better
c	Resolution	The system should support video resolution from 4CIF (Common Intermediate format), VGA, SVGA, 720P, 1080p @ 30fps. The PC resolution should be 1080P
d	Frame rate	Minimum 30 fps
E	Band width	Upto 4Mbps point to point on IP
f	Video Inputs	The system should have 2 video Inputs to connect 1XHD camera and 1 for PC DVI (Digital Video Interface)
g	Video Outputs	The system should have 2 video outputs 2XHDMI (High-Definition Multimedia Interface):DVI
h	Picture in Picture	Should support picture in picture (PIP)
2	AUDIO	
a	Standards and protocol	G.711, G.722, G.722.1 or better
b	Features	CD-Quality audio or Equivalent or Higher Instant Adaption Echo Cancellation or Equivalent or Higher Automatic Gain control (AGC) or Equivalent or Higher Automatic Noise suppression (ANS) or Equivalent or Higher
c	Audio Inputs	The system should have 2 Audio inputs (2XRCA Phone connectors) or Equivalent or Higher
d	Audio outputs	The system should have 2XRCS phone or Equivalent or Higher
e	Lip synchronization	Active Lip Synchronization or Equivalent or Higher
3	NETWORK	
a	Features	The system should support IPv4 & IPv6 The system should have features such as QoS/RSVP Standards or equivalent or higher, Packet loss based

		down speeding TCP/IP, DHCP (Dynamic Host Configuration Protocol), Auto Gatekeeper discovery, Dynamic Layout/lip sync buffering, DTMF (Dual tone multi frequency signalling tone, Date and Time.
b	ITU-T standards	DUAL STREAM:- The system should have capability to support h.239 in both H.323 and SIP mode
c	Network protocols	The system should have H.323 and SIP capability
d	Interfaces	Gigabit LAN Port
4	CAMERA	
a	Image sensor	1/3 CCD/CMOS
b	Pan	+/-75^{o} or more
c	Tilt	+ 10^{o} /-15^{o} or more
d	Focus	Automatic/Manual
e	Total field of view	250^{o} or better'
f	Horizontal view angle	65^{o} or better'
g	Zoom ratio	10x Zoom optical or better
h	Remote Control	IR/Wireless
i	Microphone	2 x 360^{o} voice pickup microphone
j	Administration	The administration of the Video endpoint should be through Web interface using HTTPs/http (Hyper Text Transfer Protocol Secure)
5	MULTI CONTROL UNIT (MCU)	
a	Dimension	The MCU must be provided with all the necessary accessories to integrate system in 19" Industrial Rack.
b	Capacity	N ports @ 4Mbps with HD 1080P @ Min 30 fps resolution should be supported on the same chassis/module without cascading with rate matching. The maximum number of ports upgradeable/scalable upto 48 ports. (Note – Port capacity "N" to be decided by user department as per there requirement)
		Option: The MCU should additionally support with a minimum of 'N' Audio only participants. (Note – "N" to be decided by user department)
c		The MCU should be accompanied with external/internal 2 PRI – ISDN gateway on same chassis or different chassis, Flexible design enables streamlined traffic flow and mass scale for converged IP networks (User department can extend the scalability to N PRI internal/external depending upon their requirement. Where N is to be decided by user)
d		The system should 1080p in continuous presence.
e		The MCU must support 2 nos of 10/100/1000 Mbps Ethernet.
6	Audio support	Audio Codecs G.711, G.722, G.722.1 of better
7	Video support	Video codec H.263, H.264 or better
8	Gatekeeper	MCU shall support an embedded/external Gatekeeper for minimum 100 registrations and 50 concurrent calls. 50/100 Management, address book and scheduling tool should have capability to manage minimum 100 devices. MCU shall have the capability to connect the PC/laptop for presentation sharing over LAN/IP network

9	No of Conferences	MCU should support multiple conferences as per the virtual MCU port capacity with flexible resource capacity by using N PORTS. Conferencing highlights personnel layout, auto layout, and border for active, speaker indication, lecture and presenting mode, conference profiles.
10	Continuous presence view	MCU should support 16 Continuous Presence (CP) on a single screen.
11	Interactive keypad	MCU shall have a built-in auto-attendant/IVR from whom users can select conferences to join or start a new conference. This shall be operated using either DTMF or' FECC (For End and Camera Control).
12	Dynamic CP layout	The MCU should support dynamic layouts where in layout should adjust based on the participants joining the calls. MCU shall support Automatic down speeding and packet error loss concealment methods to ensure optimum video and audio quality. The MCU must provide standards based on method of compensating and correcting for packet loss of media streams.
13	Chairperson view	It should have chairperson/Administrator view
14	Far End Camera Control (FECC) and Volume control	It should be possible to control far end camera
15	H-239 Support	The MCU shall support H-239 (sharing content through Video Conferncing)
16	Dial-out capability	Should dial out automatically to all participants, retry dial out conferences to complete call setup and should report specific failures. MCU shall support dual video H-239 and ability to send content also.
17	Dial-in Capability	Should offer robust software driven dial-in and/or dial out capability. MCU shall have in built/external capability to support PC based desktop clients for 19 PC users or more.
18	Security	The MCU should support one level or more of conference password-chair person and participant password.
19	Other features	i) MCU shall provide HD quality in continuous presence to all HD (1080p) endpoints connected and deliver this even if SD or HD end points or port of the conference. The solution shall support standard definition and high definition in both voices activated and continuous presence mode without loss of functionality or capacity. ii) MCU shall support communication up to 4 Mbps per port using both H.263 and H.264 video iii) MCU shall support conferences that permanently exist but use no resources/port if no. Participants are in the conference. The functionality gives end user and flexibility to directly join the conference without having to depend or wait for the system administrator/operator. iv) The MCU must support ability to terminate two different non-routable networks, so that video calls from either network can be connected into a single conference without compromising on the security. v) MCU shall provide a built-in web Interface, for configuration and administration. vi) MCU shall support 2 access level/user privileges from administrator to simple guest.

		vii) The MCU shall support scheduled conferences and ad-hoc conferencing mode at the same time for all the N ports of the system. viii) MCU shall support scheduled conferences and ad-hoc conferencing mode at the same time for all the N ports of the system. ix) MCU shall support a predefined and unique PIN for each conference. x) MCU shall allow users to create conferences on the fly from their end points without the need of Administrator/operator xi) The MCU shall support a mix of resolution in both voice activated mode and Continuous presence. Each end point shall receive at the maximum of its capacity without reducing the capacity of another. xii) MCU shall be capable of supporting H.323, SIP, and H.235 in the same conference. At any band with resolution.
20	Centralized Recording	The MCU server either internally or externally should be able to record the ongoing conference on HD 1080P for 2 or more Simultaneously Conference.
21	Connectivity with existing UCM (Optional for User Department)	It should support Video conferencing with other UCM (Unified Communication System) Port capacity can be decided by user department.
22	Display Unit	Dimension and features of display unit may be decided by user department as per their requirement.

Terms of Conditions:

- A complete set of Manuals for operation, maintenance and safety should be provided. All Documents and Manuals should be in English language.

- Documentation related to guarantee/warranty of equipment to be provided in the name of IIT Delhi.

- Each of the essential specification needs to be responded. Bidder should also provide the timeframe of the delivery. Failure to respond to any essential specification can lead to disqualification.

- Vendor should have supplied FIVE similar equipment within India. A detailed reference of supply of equipment must be provided along with the bids. Any negative comments from any one referred would disqualify the bid. IIT Delhi reserves the right to interact/ visit with the referred customer as per its convenience.

- The cost should include installation, deputation of competent engineers for installation and systems required for smooth running of the equipment.

- Pre-installation requirements, if any, should be mentioned along with their detailed technical specifications. All these items should be provided within 2 weeks of Supply Order placement so that IIT Delhi can prepare the installation requirements well in time.

- Vendor is required to supply, install and ensure proper commissioning of the equipment within 30 days of the Supply Order.

- The supplier should demonstrate the performance of the equipment to the specifications by conducting trial tests at the Structures Laboratory.

- The cost should be FOB basis.

- Comprehensive warranty of one year is required.

- The Institute reserves the right to accept/ reject any/ all the offers without assigning any reason whatsoever.

(Geetam Tiwari)

PI & Coordinator