



NAGALAND UNIVERSITY
(A Central University Estd. By the Act of Parliament No.35 of 1989)
Headquarters : Lumami - 798627

Supply of Video conferencing equipment to Nagaland University

Sl. No	Particulars	Qnty	Rate per item	Total
1	Video conferencing system(remote office)	2 nos		
2	Video conferencing system(head office)	1 no		
3	Monitor 40 inch full HD display	2 nos		
4	Monitor 55 inch full HD display	1 no		
5	Installation	3 nos		
6	Training	3 nos		



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1. SPECIFICATIONS(REMOTE OFFICE):

The proposed system must support PAL with a PTZ camera. The codec must be based on ITU standards. The VC End Point should be a codec based hardware. No software based solution is accepted here. All components of the VC system like Codec, Camera and Microphone should be from the same OEM. OEM should be in the leader's position in the Gartner's (2016) Magic quadrant for group video systems report.

Sl. No	Description	Specification Parameter
1	Package	Full HD 1080p camera, codec, Microphone Array, cables, and remote control
2	Video Standards and Resolutions	(i) It should support H.323, SIP standards for communications. (ii) It should support H.261, H.263, H.264 AVC/SVC, H.264 High Profile (iii) It should support 1080p 60 fps, 1080p 30 fps, 720p 60 fps and 720p 30fps
3	Content Standards and Resolutions	(i) It should support content sharing using standard based H.239 and BFCP over SIP (ii) It should support content resolution at HD 1080p @ 30fps (iii) It should transmit both people and content simultaneously to the far end location at 1080p @30 fps
4	Audio Standards and Features	(i) It should support G.711, G.728, G.729A, G.722, G.722.1, AAC-LD or better (ii) It should support 20kHz bandwidth with crystal clear audio and stereo sound. (iii) Automatic Gain Control and Automatic Noise Suppression (iv) Keyboard noise reduction and instant adaptation echo cancellation
5	Video and Audio Inputs	(i) 1 x HD input for connecting main HD camera (ii) 1 x HDMI input for connecting PC/Laptop to share HD content (iii) 1 x Microphone Input(Support for minimum 2 mics) (iv) 1 x 3.5mm stereo line-in
6	Video and Audio Outputs	(i) 1 x HDMI output for connecting main monitor (ii) 1 x 3.5 mm stereo line-out
7	Other Interfaces	(i) 1 x 10/100/1000 LAN port (ii) 2 x USB 2.0 for software upgrade and connecting external devices (iii) 1 x RS-232 mini-DIN 8-pin



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8	Camera	<ul style="list-style-type: none"> (i) It should support 1080p60fps with 10x optical zoom and 65° field of view. (ii) It should be future capable of enhancing video conferencing experience with advanced face-recognition technology such that it automatically scans the room and seamlessly commands the main camera to appropriately frame the users during a call without any manual intervention. (iii) It should support PAN Range of +/-100°, and Tilt of +/-20°
9	Network Features	<ul style="list-style-type: none"> (i) H.323 and SIP bandwidth up to 3 Mbps (ii) IPv4 and IPv6 support from day one (iii) Auto Gatekeeper Discovery (iv) IP Precedence (v) H.323 based Packet Lost Recovery
10	Security	<ul style="list-style-type: none"> (i) Media Encryption (H.323, SIP): AES-128, AES-256 (ii) Authenticated access to admin menus, web interface and telnet API (iii) Local account password policy configuration
11	Other Standards	<ul style="list-style-type: none"> (i) H224/H.281, H.323 Annex Q, H.225, H.245, H.241, H.239, H.243, H.460 (ii) It should support native Lync server integrations (iii) Auto sensing power supply. 125VA @ 230V @ 60Hz
12	Warranty	1 (one) Year

2. SPECIFICATIONS(HEAD OFFICE):

The End Point should be a codec based hardware. No software based solution is accepted here. Codec, Camera, & Microphone should be from the same OEM. OEM should be in the leader's position in the Gartner's (2016) Magic quadrant for group video systems report.

Sl. No	Description	Specification Parameter
1	Package	<ul style="list-style-type: none"> (i) Full HD 1080p camera, codec, Microphone, cables, and remote control (ii) Should support H.261, H.263, H.264, H.264 Annex G, H.239, H.263 & H.264 Video error concealment video standards and protocols
2	Video Input	<ul style="list-style-type: none"> (i) It should have 1 x Full HD camera (HD) as input. (ii) It should have 1 x HDMI port (iii) It should have 1 x VGA port



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3	Video Out	It should have at least 2 x HDMI port to connect displays
4	Support for People Video Resolution	<ul style="list-style-type: none">(i) 1080p, 60 fps from 1740 Kbps(ii) 1080p, 30 fps from 1024 Kbps(iii) 720p, 60 fps from 832 Kbps(iv) 720p, 30 fps from 512 Kbps(v) 4SIF/4CIF, 60 fps from 512 Kbps(vi) 4SIF/4CIF, 30 fps from 128 Kbps(vii) SIF (352 x 240), CIF (352 x 288) from 64 kbps(viii) QSIF (176 x 120), QCIF (176 x 144) from 64 kbps(ix) w288p from 128 kbps(x) w448 from 384 kbps(xi) w576p from 512 Kbps
5	Support for Input and Output Content Video Resolution	<p><i>Input:</i> WUXGA (1920 x 1200), HD (1920 x 1080i), HD (1920 x 1080p), WSXGA+ (1680 x 1050), UXGA (1600 x 1200), SXGA (1280 x 1024), WXGA (1280 x 768), HD (1280x720p), XGA (1024 x 768), SVGA (800 x 600)</p> <p><i>Output:</i> WUXGA (1920 x 1200), HD (1920 x 1080), WSXGA+ (1680 x 1050), SXGA+ (1400 x 1050), SXGA (1280 x 1024), HD (1280 x 720), XGA (1024 x 768), VGA (640 x 480)</p> <ul style="list-style-type: none">(i) The Content up to 1080p resolution at 30 fps should be supported(ii) The Content Frame Rate of 60 fps up to 1080p resolution should also be supported(iii) It should be possible to do Content Sharing during a VC call.
6	Camera	<ul style="list-style-type: none">(i) Full HD 1080p 60 fps(ii) 1920 x 1080p CCD imager(iii) Optical Zoom - 12X or more(iv) Field of View 72 Degree(v) It should be future capable of enhancing video conferencing experience with advanced face-recognition technology such that it automatically scans the room and seamlessly commands the main camera to appropriately frame the users during a call without any manual intervention.
7	Audio Input ports	<ul style="list-style-type: none">(i) It should support 1 x Microphone Port (supporting a total of 2 microphones)(ii) It should have one 1 x HDMI port(iii) It should also have 1 x 3.5mm Stereo Line-in port
8	Audio Output Ports	<ul style="list-style-type: none">(i) It should have at least 2 x HDMI port(ii) It should have at least 1 x 3.5mm Stereo Line-Out port
9	Other Interfaces	<ul style="list-style-type: none">(i) It should have at least 2 x USB ports(ii) It should have at least 1 x RS-232 Mini-DIN 8-Pin port



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10	Audio Standards and Protocols	<ul style="list-style-type: none">(i) 22kHz bandwidth technology ,AAC-LD, 20 kHz bandwidth with G.719, 14 kHz bandwidth with G.722.1 Annex C, 7 kHz bandwidth with G.722, G.722.1, 3.4 kHz bandwidth with G.711,G.728, G.729A OR Equivalent OR Better(ii) It should support Automatic gain control(iii) It should support Automatic noise suppression(iv) It should support Keyboard noise reduction(v) It should support Live music mode(vi) It should support Instant adaptation echo cancellation(vii) It should have Audio error concealment(viii) It should support Lost Packet Recovery technology(ix) It should support StereoSurround technology
11	Other Standards	<ul style="list-style-type: none">(i) H224/H.281, H.323 Annex Q, H.225, H.245, H.241, H.239, H.243, H.460(ii) It should also support BFCP (RFC 4562)(iii) Following Network parameters should be supported:(iv) It should have at least 1 x 10/100/1G Ethernet(v) It should support Auto-MDIX(vi) It should support H.323 and/or SIP up to 6 Mbps(vii) It should support reconfigurable MTU size(viii) It should support RS232 with API(ix) It should support Microsoft Office Communications server integrations(x) It should support Microsoft ICE(xi) It should support Microsoft Lync 2010(xii) It should also support IBM Sametime
12	Security	<ul style="list-style-type: none">(i) Algorithms: SHA-1, SHA-256, AES (256- bit, CBC/OFB/counter), PRNG(ii) Authenticated access to admin menus, web interface and telnet API FIPS 140-2 Validated Cryptography (Validation Certificate #918)(iii) PKI & certificate management (TLS 1.0 and SSL 3.0)
13	Other Specs	<ul style="list-style-type: none">(i) It should also support Internal Multipoint license for up to 4 sites (HDCP) via software upgrade.(ii) It should be possible to integrate a conference phone (Optional)(iii) It should be possible to integrate a Audio Mixer through a digital interface or equivalent interface.
14	Electrical Specs	<ul style="list-style-type: none">(i) Auto sensing power supply(ii) 125VA @ 230V @ 60Hz Standard operating voltage/power specifications should be complied
15	Environmental Specs	<ul style="list-style-type: none">(i) Operating temperature: 0—40°C(ii) Operating humidity: 15—80%(iii) Non-operating temperature: -40°—70°C(iv) Non-operating humidity (noncondensing): 5—95%(v) Maximum altitude: 10,000 feet
16	Warranty	1(one) Year

NOTE: License should be 1+3 and should be compatible/work with existing Polycom setup



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₹ 500/-

**TENDER DOCUMENT FOR SUPPLY OF VIDEO CONFERENCING EQUIPMENT
TO NAGALAND UNIVERSITY**

Name of the Firm : _____

Address : _____

Phone No : _____

Email ID : _____

Sign & Seal



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TERMS AND CONDITIONS:

1. VAT or any applicable Tax should be clearly indicated.
2. The Rates are **FOR** Nagaland University, Lumami.
3. Delivery of the items should be within 30 days from issue of order.
4. The University reserves the right to accept or reject the tenders without assigning any reasons thereof and no representation will be accepted.

TERM OF PAYMENT

100% Payment after the receipt, inspection, successful installation, acceptance of materials and delivery of the items.