Sealed commercial bid duly typed in the given format on the firm's letter head are invited from the OEMs/firms who have been authorized by the OEM of the following items so as to reach the Office of the Director, Computer Centre, Aligarh Muslim University, Aligarh-202002 upto 12:00 p.m on or before 31-08-2013.

<table>
<thead>
<tr>
<th>S. No</th>
<th>Model #</th>
<th>Item Description</th>
<th>Min Qty</th>
<th>Unit Price</th>
<th>Amount</th>
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<tbody>
<tr>
<td>01</td>
<td></td>
<td><strong>Technical Specification for Point to Point High Definition Video Conferencing</strong></td>
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<td>01. The video codec (ITU standard) shall support the following at a minimum</td>
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<td>A. 1920x1080 resolution (Native)</td>
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<td>B. The system should support lower resolution as per bandwidth.</td>
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<td>02. The video conference system must support a minimum of two external Full HD displays, 1920x1080p, for a crystal-clear picture and data-sharing.</td>
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<td>03. The video conference system must have automatic noise reduction, automatic gain control and echo cancellation.</td>
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<td>04. The video conference system shall support a minimum of 10 camera presets.</td>
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<td>05. The video conference system must support a Full HD PTZ 10x optical zoom camera.</td>
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<td>06. The video conference system shall support both H.323 and SIP.</td>
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<td>07. The video conference system must support full duplex audio for natural conversations.</td>
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<td>08. The video conference system must support video recording and streaming of video from video end point to external recording server without any port loss, while doing video conferencing.</td>
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<td>09. The video conference system shall support NAT/firewall traversal (H.460/SIP).</td>
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<td>10. The video conference system must provide the ability for IT staff to remotely see, via the web, snapshots of an ongoing conference.</td>
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<td>11. The system should have either DVI or HDMI input for PC / laptop data sharing. The system should support H.239.</td>
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<td>12. The video conference system shall support two possible sources of video input.</td>
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<td>13. The video conference system must have the ability to make video call on ISDN if necessary and support upto 2 mbps-PRI.</td>
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<td>14. The video conference system shall support low bandwidths down to a minimum of 128 kbps.</td>
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<td>15. The video conference system must support single cable HDMI/DVI connectivity to an HD display. The VC end point must support only High Definitions ports like HDMI/DVI.</td>
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</table>
16. The video codec shall provide support for sending and receiving two separate streams simultaneously in either a point-to-point call or multipoint calls.

17. The system should support intermediate resolution i.e., resolution from Standard definition, 512 resolutions, 576 resolutions, 720 resolutions to 1080p resolution and these resolution should depend upon bandwidth availability. Hence, video conferencing equipment should produce best video quality and video resolutions depending upon bandwidth.

18. The video codec should support the following audio and video standards: H.261, H.263, H.263+, H.264, G.711, G.722, G.722.1c, G.728, G.729, MPEG4-AAC-LC, any other

19. The video codec should support audio input.

20. The video codec should support a directly connected audio conference phone with inbuilt speakers. This help to pick up better audio quality

21. The video codec should support a fast Ethernet interface.

22. The video codec should be controllable via:
   a. A supplied infrared remote control
   b. A third party programmable control device through the following interfaces:
      • RS-232 and USB
      • Internet Protocol
   c. Remote Control devices should have all relevant keys to make control functions with the video conferencing system of other make.

23. The video codec should support both IPv4 and IPv6.

24. The system should have touch panel (external device) to control the functions of video conferencing unit such as dial, directory. This external device must be connected with video conferencing codec.

25. All items such as codec touch panel and camera supplied should be of same make.

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**Technical Specification for Multipoint Video Conferencing System**

1. The video codec (ITU standard) shall support the following at a minimum:
   a. 1920x1080 resolution (Native)
   b. The system should support lower resolution as per bandwidth.

2. The video conference system must support a minimum of two external Full HD displays, 1920x1080p, for a crystal-clear picture and data-sharing.

3. The video conference system must have automatic noise reduction, automatic gain control and echo cancellation.

4. The video conference system shall support a minimum of 10 camera presets.

5. The video conference system must support a Full HD PTZ 10x optical zoom camera.

6. The video conference system shall support both H.323 and SIP.

7. The video conference system must support full duplex audio for natural conversations.
6. The video conference system shall support both H.323 and SIP.
7. The video conference system must support full duplex audio for natural conversations.
8. The video conference system must support video recording and streaming of video from video end point to external recording server without any port loss.
9. The video conference system shall support NAT/firewall traversal (H.460/SIP).
10. The video conference system must provide the ability for IT staff to remotely see, via the web, snapshots of an ongoing conference.
11. The system should have either DVI or HDMI input for PC / laptop data sharing. The system should support H.239.
12. The video conference system shall support two possible sources of video input (all High Definition ports)
13. The video conference system shall support low bandwidths down to a minimum of 128 kbps.
14. Video conferencing equipment must support ISDN →PRI i.e., H.320 in future.
15. The video conference system must support single cable HDMI/DVI connectivity to an HD display. The VC end point must support only High Definitions ports like HDMI/DVI.
16. The video codec shall provide support for sending and receiving two separate streams simultaneously in either a point-to-point call or multipoint calls.
17. The system should support intermediate resolution i.e., resolution from Standard definition, 512 resolutions, 576 resolutions, 720 resolutions to 1080p resolution and these resolution should depend upon bandwidth availability. Hence, video conferencing equipment should produce best video quality and video resolutions depending upon bandwidth.
18. The video codec should support the following audio and video standards: H.261, H.263, H.263+, H.264, G.711, G.722, G.722.1c, G.728, G.729, and MPEG4-AAC-LC, any other
19. The video codec should support audio input
20. The video codec should support a fast Ethernet interface.
21. The video codec should be controllable via:
   a. A supplied infrared remote control
   b. A third party programmable control device through the following interfaces:
      • RS-232 and USB
      • Internet Protocol
   c. Remote Control devices should have all relevant keys to make control functions with the video conferencing system of other make.
22. The video codec should support both IPv4 and IPv6.
23. The video codec shall provide the following either through in-built (embedded) in the system or external multipoint capability to 1+3 sites and each site in multi conference mode should support @ 1080p resolution.
24. The video codec shall provide support for H.239 from any participant in a multiway call.
25. The video codec shall support a PSTN circuit that is directly connected to make an audio call.
26. The system should support 2nd camera having PTZ capability.

27. The system should have touch panel (external device) to control the functions of video conferencing unit such as dial, directory. This external device must be connected with video conferencing codec.

28. All items such as codec, touch panel and camera supplied should be of same make.

**Technical Specifications for Full HD 55" LED**

**Display device**

- **55" Diagonal Size**
- **1,920 x 1,080 (16:9) Resolution**
- **0.21(H) x 0.63(V) mm Pixel Pitch**
- **1209.6 (H) x 680.4 (V) mm Active Display Area**
- **Brightness: 350 cd/m²**
- **100,000:1 Dynamic Contrast Ratio**
- **Viewing Angle (Horizontal / Vertical): 178 / 178 °**
- **8 ms Response Time (G-to-G)**
- **16.7 Million Display Colour**
- **72 % Colour Gamut**

**Connectivity**

- **Analog D-SUB, DVI-D (Dual Link)**
- **Component, CVBS, HDMI**
- **Input Audio: Stereo Mini Jack**
- **Output Audio: Stereo Mini Jack**
- **RS232C (In/Out), RJ45**

**General Feature**

- **Slim & Light LFD with Build-in Scheduler**
- **Built in Speaker (10W + 10W), Plug and Play (through USB), PIP/PBP, Narrow Bezel, Light Weight**
- **Wall Mount - Included**

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**Term & Conditions:**

1. The items required to be delivered, installed and tested at the user site, Aligarh Muslim University, Aligarh.
2. Prices quoted should be inclusive of all taxes.
3. The firm should clearly mention the delivery schedule.
4. All items should be under 3 year's comprehensive warranty.
5. The University has the right to accept the rates of some or all of the items required.
6. The University reserves the right to reject any or all of the quotations without assigning any reasons.
7. Payment shall be made after successful installation.
8. Kindly quote validity of your offer.
9. The Aligarh Muslim University, Aligarh agrees to make payment on bill after successful supply, installation and commissioning of the items. Bank Guarantee @ 10% of total order value may be required by the University.
10. The University has the right to accept the rates of some or all of the items required. AMU reserves the right to reject quotations which are without EMD.
11. The authorization letters from respective OEMs in favour of the firm to quote, supply, install and commission and support of warranty are provided.
12. OEM's certificate to the effect that it takes the responsibility if the supplier firm become non-existent.
13. The firm shall arrange road permit at its own.
14. No duty exemption certificate shall be provided.
15. The Brochures of the quoted items should be attached.

**Director**

Computer Centre
A.M.U., Aligarh