TENDER FOR SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF AUDIO-VISUAL EQUIPMENTS AT SBILD, PAHALA, BHUBANESWAR  

BILL OF QUANTITIES

SCHEDULE-1: SUPPLY, INSTALLATION, COMMISSIONING, TESTING AND INTEGRATION OF MATERIALS

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Description</th>
<th>Unit</th>
<th>Qty</th>
<th>Rate (Rs.)</th>
<th>Amount (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A - 1</td>
<td>2 Way Full Range Ceiling Speaker</td>
<td>No</td>
<td>28</td>
<td></td>
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<tr>
<td></td>
<td>JBL Control 26C/T or Tannoy CVS6 or ElectroVoice PC6.2 or QSC AC-C6T</td>
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<tr>
<td></td>
<td>Frequency Range (-10 dB) 65 Hz to 20 kHz</td>
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<td></td>
<td>Broadband Sensitivity 89 dB SPL</td>
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<td></td>
<td>Maximum Peak SPL at 1m 110 dB SPL</td>
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<td></td>
<td>Maximum Continuous SPL at 1m 104 dB SPL</td>
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<td></td>
<td>Coverage Angle 110 Degree Conical (500 Hz to 5 kHz)</td>
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<tr>
<td>A - 2</td>
<td>4 Channel Class D Power Amplifier</td>
<td>No</td>
<td>02</td>
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<tr>
<td></td>
<td>Crown or Labgruppen or QSC</td>
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<td></td>
<td>Energy Star Qualified</td>
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<td></td>
<td>Frequency Response 20 Hz to 20 kHz</td>
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<tr>
<td></td>
<td>100 Watts Dynamic Power per Channel at 8/4 Ohms, both channel driven</td>
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<td></td>
<td>Dual Bridge Mode Power 200 Watts at 8/4 Ohms &amp; 350 Watts V</td>
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<td></td>
<td>80 Hz High Pass Filter when used in Bridged Mode in 70/100V</td>
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<tr>
<td>A - 3</td>
<td>Class D Dual Channel Power Amplifier</td>
<td>No</td>
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<td></td>
<td>Biamp or QSC or Crestron</td>
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<tr>
<td></td>
<td>200 Watts Dynamic Power per Channel at 8/4 Ohms, both channel driven</td>
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<tr>
<td></td>
<td>Bridge Mode Power 400 Watts at 8/4 Ohms &amp; 350 Watts at 70/100 V</td>
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<td></td>
<td>Front Panel Power, Signal &amp; Clip LED</td>
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<td></td>
<td>Maximum Input Level +24 dBu</td>
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<tr>
<td></td>
<td>Input Sensitivity +4 dBu</td>
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<td></td>
<td>Maximum Voltage Gain 25 dB</td>
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<tr>
<td>No</td>
<td>Description</td>
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<tr>
<td>A-4</td>
<td>24 I/O Networked DSP</td>
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<td></td>
<td>Biamp or QSC or Crestron</td>
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<tr>
<td></td>
<td>8 Analog Balanced Mic/Line Input with Phantom Power</td>
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<tr>
<td></td>
<td>8 Analog Balanced Line Output</td>
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<td></td>
<td>8 Analog Balanced Flex I/O individually switchable as Mic/Line Input or Line Output</td>
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<tr>
<td></td>
<td>16 Channels of Routable AEC Processing</td>
<td></td>
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<tr>
<td></td>
<td>1 x POTS Telephone Line on Standard RJ11 Connector</td>
<td></td>
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<td></td>
<td>4 Instances of VoIP</td>
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<td></td>
<td>128 x 128 Networked Audio Channels</td>
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<td></td>
<td>16 x 16 GPIO Logic Ports</td>
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<td></td>
<td>16 x 16 USB Audio Channels</td>
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<tr>
<td></td>
<td>16 Track Audio Player (Upgradable to 32, with optional license)</td>
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<tr>
<td></td>
<td>Approximately 2.5 GB Internal Memory for Storing Audio Files expandable to 128 GB with optional hardware</td>
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<td></td>
<td>Dual Gigabit LAN Port for Networked Audio, Control, VoIP or Network Redundancy</td>
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<td></td>
<td>Sampling Rate 48 kHz</td>
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<td>A to D &amp; D to A Converters 24 Bit</td>
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<tr>
<td></td>
<td>USB Audio 16 Bit 48 kHz</td>
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<td></td>
<td>Freely Assignable Audio &amp; Logic Processing Objects including limited to Gain Sharing &amp; Gated Automixer, Matrix Mixer &amp; Multi Band Crossover, Gain, Delay, Compressor, Limiter, Multi Octave Graphic Equalizer, Multi Band Parametric Equalizer, Feedback Controller</td>
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<td>Software Based Configuration &amp; Monitoring, Event Scheduling, Managing Audio Files &amp; Playlist, User Control Interface Configurable by Software for OEM Manufactured Controllers, iOS Devices or PC/Laptops (with optional license)</td>
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<td>Front Panel Display Displays Information about Design, Network etc.</td>
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</table>

| A-5 | Rotary Potentiometer Control |
| | Biamp or Extron or Crestron |
| | 10 kΩ linear taper potentiometer with 11 marked detents |
| | Connects to any GPIO ports |
| | Two circuit board locations where resistors can be mounted to adjust the values of the resistances |

| A-6 | 15' HDMI Cable |
| | Crestron or Extron or Biamp |
| | Cable Length : 15 Feet |
| | Signal Type : HDMI 2.0 |
| | Video Data rate support : upto 10.2 Gbps |
| | Supported Resolution: upto 4K. |
| | Connector Type : Gold plated contacts. |
| | Compliances : UL. |

| A-7 | Switching Transmitter-Receiver system with Scaling capability |
| | Crestron or Biamp or Extron |
| | Shall be a Wallplate transmitter/receiver set for audio/video switching and extension over shielded twisted pair cable |
| | Inputs: 1x VGA with Audio , 2 or more x HDMI input |
| | Output: 1 X twisted pair, 1 X HDMI |
| Resolution Support: | Upto 2K including 1080p and 1920 X 1200. Should have scaling capability and Selectable output rates from 640x480 to 1920x1200, including 1080p/60 and 2K Should have autoswitching feature. Should have Aspect ratio control feature. Should have Built-in control capability for display on/off. Signal Transmission Distance: 70 mtrs or more over twisted pair cable Should have audio embedding and deembedding feature. Should support EDID management feature. Should be HDCP complaint. Should have CEC feature. Compliances: a.CE, c-UL, UL |

| A – 8 | 6' HDMI Cable | No | 12 |
|       | Crestron or Extron or Biamp |
|       | Cable Length : 6 Feet |
|       | Signal Type : HDMI 2.0 |
|       | Video Data rate support : upto 18 Gbps |
|       | Supported Resolution: upto 4K. |
|       | Connector Type : Gold plated contacts. |
|       | Compliances : UL |

| A – 9 | Male to Male 15-pin VGA with Audio Cable | No | 2 |
|       | Crestron or Extron or Biamp |
|       | Type: Molded Male to Male analog VGA with Audio cable |
|       | Cable Length : 6 Feet |
|       | Connectors : VGA-A |
|       | Electrostatic discharge protection : Yes |
|       | Supported Signal Transmission : Computer video, Audio |

| A – 10 | Eight Output Twisted Pair Distribution Amplifiers | No | 1 |
|        | Biamp or Crestron or Extron |
Shall provide an HDMI to twisted pair distribution amplifier that shall support eight twisted pair outputs for the long distance extension and distribution of video, audio, and control over shielded CATx cable.

Shall support HDMI specifications include data rates up to 10.2 Gbps, Deep Color up to 12-bit, 3D, and HD lossless audio formats.

Shall provide automatic cable equalization for the digital input to 75 feet (22.8 meters) at 1080p/60.

Shall support embedded digital audio on HDMI input.

Shall provide control on eight bidirectional RS-232 pass-through, eight bidirectional IR pass-through, one RJ-45 for RS-232 insertion over Ethernet.

Shall provide one HDMI for buffered input loop-through for local monitor support or system expansion.

Shall provide one stereo analog audio for audio input loop-through.

Shall provide a signal transmission distance capability of 230 feet for supported resolutions, including 4K, UHD, 2560x1600, and 1080p @ 60 Hz using shielded CATx cable.

Shall provide automatic EDID management between connected devices. Unit shall be HDCP compliant.

Shall meet regulatory compliances: CE, c-UL, UL.

<table>
<thead>
<tr>
<th>A – 11</th>
<th>HDMI Twisted Pair receiver</th>
<th>No</th>
<th>5</th>
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</thead>
<tbody>
<tr>
<td>Crestron or Biamp or Extron - DTP HD DA8 4K 230</td>
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<tr>
<td>HDMI twisted pair receiver that receives Video, audio and control signal up to 230 feet over a shielded CATx cable.</td>
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<tr>
<td>Input: 1 X Twisted pair/HD BaseT over RJ 45 connector</td>
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<td>Output: 1 X HDMI</td>
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<td>Transmission Distance: 70 mtrs or more</td>
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<tr>
<td>Control port: One bidirectional RS-232, IR</td>
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<td>Resolution Support: Upto 4K.</td>
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<tr>
<td>HDCP Support: HDCP 2.2 along with earlier versions</td>
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<tr>
<td>Video Data Rate: 10.2 Gbps or better</td>
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<tr>
<td>Shall meet regulatory compliances: CE, c-UL, UL.</td>
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<thead>
<tr>
<th>A – 12</th>
<th>Six Input Four output Audio Digital Signal Processor</th>
<th>No</th>
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<tbody>
<tr>
<td>Crestron or Extron or Biamp</td>
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<tr>
<td>Inputs: Six Mic/Line along with optional phantom power for Mics.</td>
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<td>Outputs: Four Line level output</td>
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<tr>
<td>Frequency Response: 20 Hz to 20 kHz, ±0.1 dB or better</td>
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<tr>
<td>A/D &amp; D/A Conversion: Yes</td>
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<tr>
<td>THD + Noise: &lt;0.01% or better</td>
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<tr>
<td>S/N: &gt;105 dB @ maximum output</td>
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<tr>
<td>CMRR: &gt;70 dB @ 1 kHz or better</td>
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<tr>
<td>Offline configuration support: Yes</td>
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<tr>
<td>Digital Audio Processing Tools: Equalizer, Filters, Dynamics processing, Delay processing, Ducking processing, Feedback Suppressor and multiple gain stages</td>
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<td>Matrix routing of the signals: Yes</td>
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<tr>
<td><strong>A – 13</strong> Wireless Handheld Microphone Set</td>
<td><strong>No</strong></td>
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<tr>
<td>Clock Audio or Beyerdynamic or Clear One</td>
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<tr>
<td>SITC of wireless handheld microphone with receiver (UHF), 18 Channel Pre-set or better, Display on Transmitter and Receiver, RF Power output 50mW or Better, Polar Pattern: Cardioid, Carrier frequency range 500Mhz to 865Mhz, Frequency response 20Hz to 20Khz, Mute Button on Transmitter, Battery Operation time Minimum 8hr, Should have Charging Contact in Transmitter, Receiver dynamic range 80 dB (A-weighted) Or better, switching bandwidth Minimum 30 Mhz Or better.</td>
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<thead>
<tr>
<th><strong>A – 14</strong> Wireless Lapel Microphone Set</th>
<th><strong>No</strong></th>
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</thead>
<tbody>
<tr>
<td>Clock Audio or Beyerdynamic or Clear One</td>
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</tr>
<tr>
<td>SITC of wireless Lapel microphone, with receiver (UHF), 18 Channel Preset or better, Display on Transmitter and Receiver, RF Power output 50mW or Better, Polar Pattern: Omnidirectional, Carrier frequency range 500Mhz to 865Mhz, Frequency response 20Hz to 20Khz, Mute Button on Transmitter, Battery Operation time Minimum 8hr, Should have Charging Contact in Body pack Transmitter, Receiver dynamic range 80dB (A-weighted) switching bandwidth Minimum 30 Mhz Or better</td>
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<thead>
<tr>
<th><strong>A – 15</strong> Gooseneck Stem with Shock Mount Base</th>
<th><strong>No</strong></th>
<th><strong>1</strong></th>
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</thead>
<tbody>
<tr>
<td>Clock Audio or Beyerdynamic or Clear One</td>
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<tr>
<td>SITC of Gooseneck Microphone with microphone ON and OFF button and Length of Gooseneck Mic 500mm or better with dual bend Stem (Top and Bottom) with LED Indication Transducer type Condenser, Polar pattern Cardioid or better, Frequency response 50 – 19,000 Hz or better, SPL 102 dB [SPL @ 1% THD] Or better, Signal-to-noise ratio 69 dB, Clock Audio or Beyerdynamic or Clear One, SITC of Shock mount unit for Gooseneck microphone with black colour</td>
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<thead>
<tr>
<th><strong>A – 17</strong> Digital Central Control Unit</th>
<th><strong>No</strong></th>
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</thead>
<tbody>
<tr>
<td>Clock Audio or Beyerdynamic or Clear One</td>
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<tr>
<td>Central control unit should have the following features, the central unit for powering, configuring and Controlling connected Chairman, Delegate units, and option to control up to 100 units without any power supply. The system should have in built digital processing and control/ transmission of the Digital audio signals. It should have basic management facilities with at least 8 open microphones should have recording facility SD Card.</td>
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<tr>
<td>A – 18</td>
<td>Digital Chairman With Gooseneck Mic</td>
<td>No</td>
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<tr>
<td>Clock Audio or Beyerdynamic or Clear One</td>
<td>The digital Table Top wired Chairman Unit, should have clear button for deactivating all the microphone headphone connector and headphone volume control, that included detachable gooseneck microphone should be free from interference caused by mobile phones. Include the inbuilt Loudspeaker. It should combine several functionalities in one single panel. Must have detachable Gooseneck microphone with GSM immunity and LED ring, Microphone on/off button RJ 45 connectors for separate loop through cabling, Microphone length should not be less than 390 mm or better , 3.5 mm jack socket for headphone, microphone should be programmed to track the camera during video conferencing etc. as required.</td>
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<tr>
<th>A – 19</th>
<th>Digital Delegates unit With Gooseneck Mic</th>
<th>No</th>
<th>9</th>
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</thead>
<tbody>
<tr>
<td>Clock Audio or Beyerdynamic or Clear One</td>
<td>The digital Table top wired delegate unit, should have headphone connector and headphone volume control, that include detachable gooseneck microphone, should be free from interference caused by mobile phones. Inbuilt Loudspeakers, it should combine several functionalities in one single panel. Must have detachable Gooseneck microphone with GSM immunity and LED ring, Microphone on/off button, RJ45 connectors for separate loop through cabling, Microphone length should not be less than 390 mm or better , 3.5 mm jack socket for headphone, microphone should be programmed to track the camera during video conferencing etc. as required</td>
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<tr>
<th>A – 20</th>
<th>Conference Cable 2 Mtr</th>
<th>No</th>
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<tbody>
<tr>
<td>Clock Audio or Beyerdynamic or Clear One</td>
<td>Digital CAT 5 e Shielded cable/ multicore cable and length of the cable 2mtr or better</td>
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<tr>
<th>A – 21</th>
<th>Conference Cable 20Mtr</th>
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<tbody>
<tr>
<td>Clock Audio or Beyerdynamic or Clear One</td>
<td>Digital CAT 5 e Shielded cable/ multicore cable and length of the cable 20mtr or better</td>
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<thead>
<tr>
<th>B - Video System</th>
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<tr>
<th>B – 1</th>
<th>Projector 4000 Lumens</th>
<th>No</th>
<th>3</th>
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</thead>
</table>
| Christie or Panasonic or Epson | Technology - 3LCD or better  
Resolution – 1289 x 800 pixel  
Brightness - 4000 lumens or better  
Contrast – 20000:1 or better  
Standard inputs - HDMI, DVI or better  
Optical System - Motorized lens shift for zoom and focus  
Lens included with appropriate throw distance  
Shall be supplied with OEM approved ceiling mount kit |
### B - 2 Projector 5000 Lumens

| Technology - 3LCD or better |
| Resolution – 1920 x 1200 pixel |
| Brightness – 5000 lumens or better |
| Contrast – 16000:1 or better |
| Standard inputs - HDMI, DVI or better |
| Optical System - Motorized lens shift for zoom and focus |
| Lens included with appropriate throw distance |
| Shall be supplied with OEM approved ceiling mount kit |

| Christie or Panasonic or Epson |
| No 1 |

### B - 3 Motorized Front Projection Screen (Type - 1)

| Universal mounting brackets for easy installation anywhere |
| Aspect ratio of 16:10 |
| Motorised screen |
| Smooth operation |
| 220V power supply |
| Matt white projection screen surface |
| Diagonal Size: 109" or better |

| Da-Lite or Milan or Draper |
| No 4 |

### B - 4 55" LED Back-lit Monitor

| Screen size: 55"diagonal or better |
| Native Resolution : 3840 x 2160 or better |
| Aspect Ratio: 16:9 |
| Brightness: 400nits or better |
| Viewing angle: 1784 x 1780 minimum vertically and horizontally or better |
| Should have minimum (02) HDMI, (01) DVI-D, (01) 15-pin HD, Audio inputs or better |
| Should have (01) RS232 port, (01) RJ45 ports |
| Should have built-in loudspeakers |
| Include OEM approved articulating wall mount kit |

| Samsung or Panasonic or LG |
| No 4 |

### B - 5 65" LED Back-lit Monitor

| Screen size: 65" diagonal or better |
| Native Resolution : 3840 x 2160 or better |
| Aspect Ratio: 16:9 |
| Brightness: 500nits or better |
| Viewing angle: 1783 / 1780 |
| Should have minimum (02) HDMI, (01) 15-pin HD, Audio inputs or better |
| Should have (01) RS232, (01) RJ45 ports |
| Should have built-in loudspeakers |
| Include OEM approved wall mount kit |

| Samsung or Panasonic or LG |
| No 2 |

### C – Rack, Podium & Cables

### C – 1 Shielded RJ-45 Plug for Shielded Twisted Pair Cable

<p>| Extron or Crestron or AMX or Kramer |
| No 1 |</p>
<table>
<thead>
<tr>
<th>C – 2</th>
<th><strong>Podium</strong></th>
<th>No</th>
<th>1</th>
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<td></td>
<td><strong>UNI or AHA or Tecomm</strong></td>
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<td></td>
<td>Customised Podium in Metallic Frame and Wooden Top, powder coated with caster wheels for easy movement of the podium, Drawer for keyboard &amp; mouse, built in 19” Rack for placing CPU and AV Equipment’s Top Connectivity plate with 2 X USB, one MIC XLR, 1 VGA IN Audio IN, 1 HDMI IN, Power Socket with ON/OFF for external laptop, built in HDMI 4 x 2 HDMI Matrix Switcher with HDMI 2.0,HDCP 2.2 &amp; 1.4, for internal connectivity built in 21.5” Electromagnetic Interactive Panel with Full HD (1920 x 1080) Resolution and supplied with Electromagnetic Touch Digitizer Battery less Pen with back side eraser</td>
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<tr>
<td>C – 3</td>
<td><strong>Microphone Cable</strong></td>
<td>Mtr</td>
<td>225</td>
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<td></td>
<td><strong>Extron, Belden, Kramer</strong></td>
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<td></td>
<td>24 AWG stranded (27x38) Microphone cable or better High-conductivity bare copper conductors or better Should have PVC insulation Bare copper spiral shield (90% coverage) or better Should have PVC jacket Operating Temperature Range: -30°C To +60°C or better Non Plenum</td>
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<tr>
<td>C – 4</td>
<td><strong>Speaker Cable</strong></td>
<td>Mtr</td>
<td>1025</td>
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<td><strong>Belden, Klotz, Eurocable</strong></td>
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<td></td>
<td>Multi-Conductor - High-Conductivity Copper Speaker Cable Twisted Jacketed Connector 14 AWG stranded (42x30) tinned copper conductors PVC insulation PVC jacket. Operating Temperature Range : -20°C To +90°C or better NEC/(UL) Specification: CL3 or better AWM Specification : UL Style 2587 (600 V 90°C) or better CSA Specification : FAS90 or better EU Directive 2011/65/EU (ROHS II) compliant or better EU RoHS Compliance or better</td>
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<tr>
<td>C – 5</td>
<td><strong>Equipment Rack</strong></td>
<td>No</td>
<td>2</td>
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<td></td>
<td><strong>Valrack or Middle Atlantic or WQ</strong></td>
<td></td>
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<tr>
<td></td>
<td>Industry Strandard Rack 9U</td>
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### C – 5.1 Equipment Rack

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Valrack or Middle Atlantic or WQ

Industry Standard Rack 12U

Multi Hollow Extruded Aluminum Frames Structure across the X, Y & Z axis to give an Uninstruct bolting mechanism (UL) and further reinforced with 8 Nos. of corner bracket which ensure better stability and strength or better

Configured to hold equipment with the help of two pairs of mounting angle provided with square slots to accommodate M6 Cage nuts at universal pitch Pattern or better

Top cover ventilated on all sides along the width and depth thereby enhancing exhaust of hot air or better

Cable entry provision is both at the top and bottom covers with 35mm round cable entry point, the cable entry provision comprising of a gland plate with cable entry points in round cut outs edge protected with rubber grommets or better

Monitor Tray – Ventilation – Tray Specially designed with multiple bend and additional stiffeners for better load carrying capacity or better

Metal Steel Ventilation Panel – Blank Ventilation Panels to help to fill the open space in the rack along with ventilation to facilitate air circulations or better

Castor – 4 Nos. of heavy duty castors to take care of heavy load bearing capacities are provided, 2 Nos. in the front with Break & 2 Nos. on the rear without break or better

Rack mount channels with Hardware sets or better

Earthing Strip – Copper strip to take care of the grounding or better
Earthing Strip – Copper strip to take care of the grounding or better

**C – 5.2 Equipment Rack**

Valrack or Middle Atlantic or WQ

Industry Standard Rack 17U
Multi Hollow Extruded Aluminum Frames Structure across the X, Y & Z axis to give an Uninstruct bolting mechanism (UL) and further reinforced with 8 Nos. of corner bracket which ensure better stability and strength or better
Configured to hold equipment with the help of two pairs of mounting angle provided with square slots to accommodate M6 Cage nuts at universal pitch Pattern or better
Top cover ventilated on all sides along the width and depth thereby enhancing exhaust of hot air or better
Cable entry provision is both at the top and bottom covers with 35mm round cable entry point, the cable entry provision comprising of a gland plate with cable entry points in round cut outs edge protected with rubber grommets or better
Monitor Tray – Ventilation – Tray Specially designed with multiple bend and additional stiffeners for better load carrying capacity or better
Metal Steel Ventilation Panel – Blank Ventilation Panels to help to fill the open space in the rack along with ventilation to facilitate air circulations or better
Castor – 4 Nos. of heavy duty castors to take care of heavy load bearing capacities are provided, 2 Nos. in the front with Break & 2 Nos. on the rear without break or better
Rack mount channels with Hardware sets or better
Earthing Strip – Copper strip to take care of the grounding or better

**C – 6 Full Range Ceiling Speaker**

No 13

Frequency Range (-10 dB) 70 Hz to 16 kHz
Broadband Sensitivity 89 dB SPL
Maximum Peak SPL at 1m 107 dB SPL
Maximum Continuous SPL at 1m 101 dB SPL
Coverage Angle 140 Degree Conical (500 Hz to 5 kHz)
Rated Noise Power 16 Watts
4.5" Polypropylene Transducer
Transformer Taps at 70/100V 16, 8, 4 & 2 Watts & 8 Ohm Bypass
Rails & C-Rings Included as standard accessory
Back can material: Galvanized steel
Baffle material: ABS
Grille material: Powder coated steel
JBL/Bose/Yamaha MAKE

**C - 7 Full-range Ceiling Speaker -Type A**

No 85
| **Frequency range:** 62 Hz - 18 kHz  
| **Sensitivity:** 93 dB  
| **Maximum continuous SPL:** 101 dB  
| **Maximum peak SPL:** 107 dB  
| **Rated Coverage:** 140° conical  
| **Rated noise power [rms]:** 6 W  
| **4.5-inch] weather resistant paper cone**  
| **Transformer taps:** (at) 70 V 6, 3, 1.5, 0.75 W, (at100V) 6, 3, 1.5 W  
| **Baffle material:** ABS  
| **Grille material:** Powder coated steel  
| **JBL/Bose/Yamaha MAKE** |

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<tr>
<th><strong>C - 8</strong></th>
<th><strong>4 Channel Class D Power Amplifier</strong></th>
<th><strong>No</strong></th>
<th><strong>02</strong></th>
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</thead>
</table>
| **Max Power 700 Watts at 8 Ohms per Channel**  
| **Max Power 800 Watts 4 Ohms per Channel**  
| **Max Power 1250 Watts / 1500 Watts per Dual Channel**  
| **Parallel at 4ohm /2ohm**  
| **Gain 33 dB**  
| **Frequency Response (8 Ω) 20 Hz - 20 kHz +0.2 dB / -0.7 dB**  
| **Noise Unweighted output unmuted>102dB ,Weighted output muted>106dB**  
| **Input impedance >8k balanced and >4k unbalanced**  
| **Input Sensitivity ,Continuously variable: Vrms 1.23 mV to 17.35 V,dBu -56 to 27,dBv -58.2 to 24.8**  
| **Damping Factor >100**  
| **Amplifier Protection Short Circuit, Oper Circuit, Thermal, RF Protection, On/Off Muting, DC Fault Shutdown, Active Inrush Limiting, on/off muting**  
| **Power & Channel Mute Button, Push Buttons & Control Knob for front panel control**  
| **Channel Input Signal & CLIP LED indicators, Channel Output & LIMIT LED meter on front panel**  
| **Front Panel LED Display**  
| **Input 3-pin Euro (green) and Q-LAN Network connectivity, Output :8-pin Euro**  
| **Universal power supply 100 - 240 VAC, 50 - 60 Hz with active PFC**  
| **Kramer/Extron/Crestron MAKE** |

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<tr>
<th><strong>C - 9</strong></th>
<th><strong>Network Page Station with 16 or more direct-select buttons and Gooseneck mic</strong></th>
<th><strong>No</strong></th>
<th><strong>01</strong></th>
</tr>
</thead>
</table>
| **Capacitive Touch Programmable Keypad & LCD**  
| **Audio Channel Capacity:** 2 line inputs, 1 line output  
| **Front Panel Controls Paging Keypad:** Capacitive touch keypad  
| **Microphone:** PTT momentary switch  
| **Front Panel Indicators Talk, Ready, Busy:** Bi-color LEDs (red/green)  
| **Keypad button activity:** Green LEDs  
| **LCD:** monochrome graphics display |
| Network LAN A: RJ45 1000 Mbps only  |
| Network LAN B: RJ45 1000 Mbps only  |
| DC power +24V inlet: 2-pin Euro receptacle  |
| Line input: 3-pin Euro receptacle  |
| Line output: 3-pin Euro receptacle  |
| GPIO: 6-pin Euro receptacle  |
| Clock Audio or Beyerdynamic or Clear One make |

| C - 10 | Pre-configured Network Switch | No | 1 |
| 1Gbps Switch Ports (PoE+): 10 (4) |
| SFP Ports: 2x 1Gbps |
| PoE Budget: 75 W |
| Mounting: 1 RU half-width |
| Cooling: Variable speed fan |
| Power Supply: Integrated AC mains |
| Cisco /D-Link /Equivalent make |

| C - 11 | Single-Gang Networked Audio Controller | No | 1 |
| User interface: One rotary / pushbutton encoder knob; one pushbutton toggle selector |
| Display type 1.5 in (38.1 mm) diagonal high-contrast OLED display |
| Status indicator RGB LED bar, adjustable brightness |
| Network physical layer Ethernet |
| Network connector(s) RJ-45 |
| Network transmission speed 100 Mbps |
| PoE power 802.3af Class 0 |
| Power consumption < 2 W Max |

| C - 12 | DVD Player of PHILIPS/SAMSUNG/SONY make with USB & HDMI input option | No | 1 |

| (I) | Total amount in Rs. towards SITC of AV equipment Excluding GST |
| (II) | Total amount in Rs. towards Comprehensive Annual Maintenance Contract of AV equipment (Excluding GST) |
| (III) | Grand total amount in Rs. (I + II) |

Grand Total amount in words
(Rupees........................................................................................................................................................................)

Note:
i) The quoted rate should be inclusive of materials, labour, wages, fixtures, transportation, installation, all taxes (excluding GST), wastage’s, Octroi, Insurance, machinery, temporary works such as scaffolding, cleaning,
overheads, profit, statutory expenses, incidental charges and all related expenses to complete the work. GST shall be paid extra as applicable

ii) The contractor should work according to the final layout and in close co-ordination with interior and electrical Work. The SBIIMS/Bank has discretion to drop any of the items from the scope of work at the time of execution and as per the site requirements. Vendor has to take the confirmation from before placing the final order.