

Part II: Essential Details of Items/ Services required

1. **Schedule of Requirements.** List of items / services required is as follows: -

<u>Ser</u>	<u>Item Description</u>	<u>Deno.</u>	<u>Qty.</u>
(a)	SITC- Integrated audio system	Set	01
(b)	SITC – display system	Set	01
(c)	SITC	Set	01
(d)	SITC – Cables, Connectors & Accessories	Set	01
(e)	Engineering cost for all the equipment	Nos	01

2. **Technical Detailed Specification.**

<u>Ser</u>	<u>Item Description</u>	<u>Deno.</u>	<u>Qty.</u>	<u>Specification</u>
(a)	SITC- Integrated audio system	Set	01	<p>(aa) 2X20 Watt ceiling mount speaker, Qty. -16: - Single loudspeaker performance: -</p> <ul style="list-style-type: none"> (i) Frequency response (-3dB): 95-16000Hz. (ii) Frequency range (-10dB) :83-19000 Hz. (iii) Nominal Coverage angle (1-4 kHz) :150°. (iv) Nominal Coverage angle (1-10 kHz) :140°. (v) AES transducer test (5) extended-lifecycle test (4). (vi) Power handling, long-term continuous :20 W. (vii) Power handling, Peak:80 W. (viii) Sensitivity SPL/1W @ 1m:86dB. (ix) Calculated maximum SPL @1m:99dB. (x) Calculated maximum SPL @1m, peak:105dB. (xi) Recommended High-pass protection: 85Hz with minimum 24-dB/octave filter. (xii) Transformer taps:70V:1,2,4,8,16W, bypass;100V:2,4,8,16W, bypass. <p>Transducers</p> <ul style="list-style-type: none"> (i) Full-range driver:1x2.25-inch woofer (57mm). (ii) Nominal impedance: 16 ohms (transformer bypass). <p>(ab) 2 channel 120 Watt each power amplifier, Qty. - 02 :-</p> <ul style="list-style-type: none"> (i) Supply, installation, testing and commissioning of integrated high impedance class D dual zone amplifier with output power of 2 x 120 W @ 70/100 V. (ii) Frequency response – 55 Hz-20 kHz (+0/-3 db, @ 1 W reference 1 kHz). (iii) THD+N -≤1% (at full rated power) (iv) Channel separation (crosstalk) -≤60 dbv (below rated power, 1 kHz).

			<p>(v) A/D and D/A converters – 24-bit / 48 kHz. (vi) Audio latency – 10.4 ms – (any input to speaker output or aux output). (vii) THD <0.3% at rated power. (viii) Channel separation \leq60 dbv (below rated power, 1kHz). (ix) Dynamic range>88 db (x) Maximum input level :+10 dbv or better. (xi) Shall support dual remote controller (wired) for volume control.</p> <p>(ac) Dual channel handheld microphone, Qty. – 01 (i) Operating range: 300 ft(91 m) line of sight (actual range depends on RF signal absorption, reflection and interference). (ii) Audio frequency response :50-15,000 Hz (dependent on microphone type). (iii) Transmitter RF output power : 10 mW, typical (varies by region). (iv) Audio output connector : XLR and 1/4" (6.35 mm) unbalanced. (v) Maximum output level :-27 dBv (XLR, mic level), -13 dBv (1/4"). (vi) Dynamic range:100 Db A-weighted. (vii) System distortion :0.5% THD typical (ref. +/-33 kHz deviation, 1 kHz tone). (viii) Transmitter for handheld Mic:- audio input level gain max : 0dBv:-20 dBv maximum, -10dBv-10 dBv maximum, gain adjustment range : 10 dB, RF transmitter output :10 Mw, typical varies by region, power requirement:2 LR6 AA batteries, 105 V, alkaline, battery life: should be more than 14 hours (alkaline).</p> <p>(ad) Gooseneck microphone, Qty. – 02 (i) Cartridge type: Electret condenser. (ii) frequency response: 70 – 16000 Hz. (iii) Polar pattern: Cardioid. (iv) Output Impedance: 180Ω (v) Sensitivity (at 1 kHz, open circuit voltage): - 33 dBV/Pa[1] (22 mV). (vi) Maximum SPL (1 kHz at 1% THD): 120 dB SPL. (vii) Signal to noise ratio (referenced at 94 dB SPL). (viii) Dynamic range: 93dB. (ix) Self noise (equivalent SPL, A-weighted, typical): 27 dB SPL (ix) Common mode rejection (10 Hz to 100 kHz): >45dB. (x) Preamplifier output clipping level (1% THD): -7dB (xi) Polarity: Positive pressure on diaphragm produces</p>
--	--	--	---

				<p>positive voltage on pin 2 with respect to pin 3.</p> <p>(ae) 6 Channel digital audio mixer, Qty. – 01</p> <p>Input channels</p> <ul style="list-style-type: none"> (i) Line input:6 (2 mono +2 stereo) (ii) Mic input :2 (iii) Mono input (mic/line):2(ch1-2) (iv) Mono/stereo input (mic/line):0 (v) Stereo input (line):2 <p>Output channels</p> <ul style="list-style-type: none"> (i) Stereo output:2 (ii) Monitor output:0 (iii) Aux send:0 (iv) Group out:0 (v) Phones out:1 <p>Bus</p> <ul style="list-style-type: none"> (i) Stereo:1 (ii) Group:0 (iii) Aux:0 (iv) USB audio-usb in/out:no (v) Phantom power:+48V per channel. <p>Electrical specification</p> <ul style="list-style-type: none"> (i) Total harmonic distortion: +14dbu (20hz-20kHz@ +14dbu 0.02%, 0.01%@ +8dbu (20hz to 20 kHz), gain knob:min. (ii) Frequency response: +0.5/-1.5db (20hz-48khz), refer to the nominal output level 1khz, hum & noise level; equivalent input noise:128 dbu (mono input channel, rs:150ω, gain knob:max); residual output noise:-102dbu (stereo out, stereo level knob:min). (iii) Compressor ch9-24: control x1 (gain/threshold/ratio). (iv) Crosstalk@1kHz:- 88dB (v) Input channel eq high \pm15db (10 kHz shelving), low\pm15db (100hz shelving). (vi) Input channel eq: high \pm15db:)10khz shelving); mid\pm15db: (205khz peaking), low\pm15db (100hz shelving). (vi) Led level meter : pre monitor level : 2x7 points led meter (peak, -6, -3, 0, -3, -10, -20db). (vii) Peak led: led turns on when post eq signal reaches 3db below clipping level. <p>(Note:- Tender specific OEM authorization is mandatory else the bid will not be considered.)</p>
(b)	SITC – display system	Set	01	<p>(aa) 6000 Lumens ultra-short throw projector, Qty. – 01: -</p> <ul style="list-style-type: none"> (i) Display technology: DLP™ (ii) Native resolution: WUXGA (1920 x 1200)

(iii) Brightness: 6,000 lumens
 (iv) Contrast ratio: 30,000:1 dynamic: 3,00,000:1
 (v) Native aspect ratio: 16:10
 (vi) Aspect ratio – compatible 4:3,16:9,16:10
 (vii) Keystone correction – horizontal: +/-30°
 (viii) Keystone correction – vertical: +/-30°
 (ix) Has vertical auto keystone correction: yes
 (x) Displayable colors (millions): 1073.4
 (xi) Horizontal scan rate: 15.75~91.146 KHz
 (xii) Vertical scan rate 24~85 hz (120 hz for 3D) Hz.
 (xiii) Uniformity 85%
 (xiv) Screen size: 0.75m~7.76m (29.38~305.6")
 (xv) Laser life: 30,000 hrs
 (xvi) Throw ratio: 0.8:1
 (xvii) Projection distance: 0.5m – 5.2m
 (xviii) Zoom type: fixed
 (xix) Focal length 11.66
 (xx) Lens shift (vertical) - 100~120%
 (xxi) Native offset 100%
 (xxii) Lens shift :yes
 (xxiii) Connections: input 1xHDMI 1.4a 3D support, 1x HDMI 1.4a 3D support + MHL, 2xVGA,1xcomposite video, 1x Mic 3.5mm,1xAudio 3.5mm,1xHD base T, 1xS-video outputs 1xVGA, 1xUSB-A power 1.5A,1xaudio 3.5mm control 1xRS232, 1x12V trigger, 1xRJ45.
 (xxiv) Noise level (min): 33dB
 (xxv) Noise level (max): 38dB
 (xxvi) PC compatibility: UHD,FHD,UXGA,SXGA,WXGA,HD,XHA,SVGA,VGA, MAC.
 (xxvii) 2D compatibility: NTSC M/J, 3.58Mhz, 4.43Mhz PAL B/D/G/H/I/M.N, 4.43Mhz SECAM B/D/G/K/K1/L, 4.25/4.4Mhz 480i/p, 576i/p, 720p(50/60Hz), 1080i(50/60Hz), 1080p(50/60Hz), 2160p(24/50/60Hz)
 (xxviii) 3D compatibility: side by side:1080i50/60, 720p50/60 frame-pack:1080p24, 720p50/60 over-under:1080p24, 720p50/60.
 (xxix) 3D: full 3D
 (xxx) Security Security bar, Kensington lock, Password protected interface.
 (xxxi) IP rating: IP6x
 (xxxii) 24/7 operation: yes
 (xxxiii) Operating conditions: sea level to 10000 feet(@23°C; manual switch to high altitude mode @5000 feet & above.
 (xxxiv) Heat dissipation: 1,328BTU/Hour
 (xxxv) Speaker count: 2
 (xxxvi) Watt per speaker: 10W
 (xxxvii) LAN-Control: Yes
 (xxxviii) LAN: Yes

(ab) 15.6" Interactive pen display, Qty. – 01: -
 (i) 8,192 levels of digital pen pressure sensitivity.
 (ii) Lower document fraud risk through enhanced security and verification with state-of-the-art AES

				<p>256/RSA 2048 encryption.</p> <p>(iii) Ability to switch between landscape and portrait mode to view and sign A4/letter size digital documents within business workflow.</p> <p>(iv) LCD panel type: IPS</p> <p>(v) Cover glass surface: tempered glass with AG film.</p> <p>(vi) Aspect ratio: 16:9</p> <p>(vii) Native resolution: 1920x1080 pixels.</p> <p>(viii) Video input: HDMI</p> <p>(ix) Viewing angles) horizontal/vertical): 176°/176°</p> <p>(x) Colours: 16.7M colors</p> <p>(xi) Luminance (brightness): 0.13 cd/in²/210 cd/m² (typical)</p> <p>(xii) Contrast ratio 1000:1 (typical)</p> <p>(xiii) Response time:25ms (typical)</p> <p>(xiv) Technology: electromagnetic resonance (EMR)</p> <p>(xv) Screen dimensions: 15.6" diagonal (13.5x7.6 inches /344 x 194mm)</p> <p>(xvi) Coordinate resolution:5080 lpi</p> <p>(xvii) Coordinate accuracy:±0.02 inches/±0.5 mm (centre)</p> <p>(xviii) Report rate:187 points per second</p> <p>(xix) pressure level: 8192</p> <p>(xx) Encryption: AES 256/ RSA 2048</p> <p>(xxi) Reading height 0.2 inches / 5 mm or more (centre)</p> <p>(Note:- Tender specific OEM authorization is mandatory else the bid will not be considered.)</p>
(c)	SITC	Set	01	<p>(aa) Digital podium, Qty. – 01</p> <p>Main cabinet system: -</p> <p>(i) Metallic structure customized to house hardware/software with powder coated fitted with cooling fans & caster wheels with brakes.</p> <p>(ii) Podium dimensions: - height – presenter side 1060mm, audience side 1190mm, front width 670mm, side width 730mm.</p> <p>(iii) External connectivity options: 2xUSB, 2xXLR on top and at right bottom – HDMI in/out, VGA in/out, audio in/out, gigabit LAN, power socket with on/off switch.</p> <p>(iv) Drawer for document camera with dimensions – depth 560mm, width 440mm, height 150mm.</p> <p>(v) Metallic top tray placing documents, laptop etc dimensions 630mmx655mm.</p> <p>(vi) Drawer for key board and mouse upto 60 deg motorized tilt for screen.</p> <p>(vii) Security – all drawers, sliding trays, and doors should be lockable.</p> <p>(viii) Minimum 8x5 amp modular universal metallic spike buster for devices connectivity with miniature circuit breaker and central power control.</p> <p>(ix) Provision to fix logo at the front side with the</p>

				<p>flexibility to change the logo. Size – 560mmx410mm.</p> <p>(x) Provision of 19" rack inside podium to fit in international standard equipment with minimum adjustable shelves.</p> <p>(xi) Provision for upgrades to cater for future changes in technology.</p> <p>(xii) Provision for installing speech prompter on the podium itself.</p> <p>(xiii) Access doors for servicing both from front and back sides of the podium.</p> <p>(xiv) Wire managers on left, right sides and at bottom for flexibility of managing additional wires/wiring.</p> <p>(ab) Computer system PC-i5, 16GB/512GB SSD with window10</p> <p>(ac) Interactive Display -</p> <p>(i) Size 21.5" with multi touch, up to 60 deg motorized tilt.</p> <p>(ii) Resolution 1920x1080-pixel</p> <p>(iii) HDMI/DVI, VGA and USB input ports.</p> <p>(iv) Brightness 250 cd/m²</p> <p>(ad) HDMI Multimedia Controller</p> <p>(i) Integrated multimedia controller on top panel with key pad to control Projector Screen, audio system volume control, switch on/off the PC & Projector, IR device control, RS232, LAN connector USB etc. switching among PC, Laptop and document camera with auto splitting between podium monitor & projection system, switching DVD & TV etc.</p> <p>(ii) Minimum three full HD (HDMI) input devices and two full HD (HDMI) output devices connectivity with three numbers for VGA connectivity should be available.</p> <p>(Note:- Tender specific OEM authorization is mandatory else the bid will not be considered.)</p>
(d)	SITC – Cables, Connectors & Accessories	Set	01	<p>(aa) 15KVA online UPS, Qty. – 1: -</p> <p>(i) Power: 5KVA/4000W</p> <p>Input: -</p> <p>(i) Input system: single phase & Earth ground,</p> <p>(ii) Rated voltages: 230V AC, voltage range: 120V to 300V (0-50% load), 170V to 280V (100% load),</p> <p>(iii) frequency: 50/60 hz +/-5 hz (auto sensing),</p> <p>(iv) Power factor: >0.99@ full load</p> <p>(v) Voltage range of bypass: 230V AC +10% (adjustable)</p> <p>(vi) Output system: single phase & earth ground.</p>

				<p>Output: - (i) Rated voltage: 220/230/240V AC (+/-1%), (ii) Power factor: 0.8, (iii) waveform: Sinewave, (iv) Distortion: <3%, (v) Efficiency:85%, (vi)Normal mode frequency : 45=55Hz (adjustable), (vii) Inverter overload capacity: 110% for 5 minutes/150% for 5 second, (viii) output voltage distortion: <3% for linear load, <6% for non-linear load.</p> <p>Battery: - (i) Transfer time: 0 ms (normal mode to battery mode), 5ms (Normal mode to bypass mode), Crest factor: 3l (ii) Batteries voltage: 24V DC/36V DC/ 72V DC/ 96V DC/ 192V DC/ 240V DC. (iii) Charge current: 2A for internal batteries, 6A max (adjustable), backup time: 10-15 minutes. (iv) Battery charge time: Charger to 90% battery capacity in 3 hours (standard). (v) Interface port(s): RS232 + Dry contact (DB9) + USB (Optional), optional card: SNMP adaptor</p> <p>Communicate & interface: - (i) LCD display: information for load/battery/input/output/operating mode. (ii) Audible alarm: Actively audible alarm for utility failed/ Battery low/ overload condition. (iii) Indicator: Load indication, load on battery, low battery, mains on, overload, EPO: yes</p> <p>(ab) 15 u Equipment Rack (Qty.1) (i) Cables and connectors as per requirement.</p> <p>(Note:- Tender specific OEM authorization is mandatory else the bid will not be considered.)</p>
(e)	Engineering cost for all the equipment	Nos	01	Cost of installation for all the equipment including transportation charges.