Office of the Central Purchase unit
National Institute of Technology Srinagar.
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E-TENDER NOTICE (CORRIGENDUM)

Tender document No.

NITS/CPU/ET/2019/PMDP/046 dated 24.01.2020 for

Supply of equipment for Smart Classrooms.

Please read change in the various dates for submission of tenders in response to the above mentioned tender notice as detailed below:-

S.No	Description of item	Bid security	Last date & time for purchase of bid document online	Last date & time for online submission of bids	Date & time for opening of Technical bids
1	Supply of Smart Classrooms.	25,00,000/= (NSIC/MSME Exempted)	06.03.2020 22.00 hrs	09.03.2020 13.00 hrs	09.03.2020 at 14.30 hrs.

Revised specifications, terms & conditions are attached at Annexure-I (Revised)

Officer In-charge
Central Purchase Unit

No. NITS/CPU/20/5550
Dated:- 20.02.2020

Annexure-I (Revised)

"Name &/Specifications   of equipment's"

S.NO	Description	Particulars	Make/Model No	Qty
1.	**Interactive Flat-panel**	**SITC of Interactive flat-panel:** Duo System: Built-in Android system os 8.0 or higher, supports Mini-PC for Windows Plug & Play: Compatible with Microsoft Human Interface Device Protocol. User can experience the touch function without driver installation Eco-Friendly: LED backlight in our interactive touch screen offers a thinner panel, lower power consumption, better heat dissipation, brighter display and better contrast level and produce less pollution on disposal Multi-Touch: based on advanced infrared sensor technology 10-point touch to enhance the productivity Easy Maintenance: Sophisticated mechanical design for easy maintenance Backlight LED (Backlit)Panel Technology IPS Active Screen Size (Diagonal) **75"** Display Colors 1.07B (10 bit)Bezel Width 60 mm Aspect Ratio 16:9 Resolution 3840 x 2160 Pixel (4K) Orientation Landscape Brightness 500 cd /m2 Contrast 10,000:1 Response Time 8 ms Video / Audio System PAL / NTSC / SECAM AV Inputs / Outputs Inputs: HDMI 2.0 x 1, HDMI 1.4 x 2, VGA x 1, USB 2.0 x 4 (including 2 USB ports in Front), USB 3.0 x 2 (including 1 USB port in front), DP x 1, Audio x 1, AV x 1, RS232 x 1, LAN x 2 Outputs: HDMI x 1, Touch x 2, Audio x 1, Coax x 1 Speaker Output Power 20W x 2 Media File Format Support Video: MPEG1, MPEG2, MPEG4, H264, RM, RMVB, MOV, MPEG, VC1, Divx, FLV(Support 1080P HD Decoding) Audio: WMA, Mp3, M4A, (AAC) Power Consumption Maximum < 400W; Standby Mode ≤ 0.5W Working Voltage AC 100-240V, 50/60 Hz Duty Cycle 16 x 7 Viewing Angle 178:178 (Horizontal / Vertical) Presentation Solution (Optional) Can connect to external gadgets (Microsoft / Android / iOS) wirelessly (draws power internally, without any external power source) Annotation / Signage Software Annotation Features like draw, choose, pens, annotate, erase, color, shapes, sizes, text, edit, fonts, stamp, move, capture picture, video, save, rotate, undo, image gallery, print, floating keyboard, background etc. Touch Touch Surface Anti Glare Toughened Glass Touch Sensor IR HID Support Available Android System Version Android 5.1 snapdragon 435 or higher RAM 4 GB ROM 32 GB Touch Points Multi touch 5 Points writing, 10 points touch Writing Tools Pen or Finger Touch Resolution 32767 x 32767 Response Time < 12 ms Cursor Speed 100 points /sec Positioning Accuracy 1 mm Communication Interface USB Mini PC Configuration CPU Intel Core i5/i7 Processor Operating System Windows 10 Hard Disk 1 TB SATA Memory 4/8 GB, DDR 4 Audio through speakers Storage Conditions / Packing Information Working Temperature / Humidity 00 C ~ 400 C / 10-95% RH Mounting Wall-mounted and stand Outline Dimension 1762 x 1034 x 100mm (L x H x	Cisoc/SAMSUNG/AHA/ /extreame media/sony or Equivallent	30 Nos

		D) Packing Dimension 1913 x 1225 x 280mm (L x H x D) Net Weight 60 Kg Gross Weight 78 Kg Standard Accessories Power Cable, VGA Cable, USB Cable, Audio Cable, Writing Pen x 3, User Manual, Remote Control, Wall-mount bracket or equivalent specs which suits to the requirement with Interactive Flat panel having Annotation, Wireless presentation up to 4K and Audio and Video Conferencing features. It should support Real-time media (voice, video, and screen sharing) is encrypted using the Secure Real-Time Transport Protocol (SRTP); end-to-end encryption uses Advanced Encryption Standard (AES) 128, AES 256, SHA1, SHA256, and RSA **.**		
2.	**Digital Podium With all accessories**	**SITC of Digital Podium With all accessories:** Dual Monitor Digital Podium is compatible with all multimedia equipment, operating systems, and e-learning software and teaching material. It has Edupen Pro pre-loaded interactive software. It comes with RFID and RMS module. Dual Monitor Digital podium combines latest and safest technologies of today's need. Integrated two interactive monitor helps to manage content and flow of presentations easily and efficiently. The podium is secured with RFID technology, due to which only authentic users can access and operate the podium. It also has the RMS system which allows remote control and monitoring of equipment. In buildings it enables to control everything from one place..D Tablet MonitoR LCDMS fabricated Sheet with wooden sliding top. Comes with all directional wheel. Enclosure should be Polymer Powder coated. Lock: Wooden top, Side and main door lock. Sufficient space for housing of Document camera and other accessories. All parts of podium should be inside podium when not used. This to stop probable damage by student etc. 21" or above Touch Display. IR technology CPU:Intel® 9th Generation Core i7 with minimum clock speed of 3.0 GHz, 12MB Cache , 8 Core or better ,Chipset : Intel Q370 chipset, power supply : 400 W or higher active PFC Power Supply with 92% efficiency, 8gb RAM, 2TB HDD, 8x DVD Writer, Weight should be no more than 7.5KG and volume no more than 16 L, Key board, Mouse., FCC, CE, RoHS, UL Certified, ISO 9001, 14001,20001,27001, OEMMAF require for CPU, Genuine Microsoft Windows 10 Pro 64-bit, Slots : Minimum 4 PCI/PCIe Slots (1 x PCIex16, 1 x PCIex4,1 x PCIex1,1 PCI)& 2x (M.2 PCIe) Power Unit for Podium–1KVA Line Interactive UPS with minimum 10-15-minute power back-up, BIS Certified Controller: Signal interface: Audio input,. Audio output *1;Video input *4, Video output *1, VGA input(include laptop) *3,VGA output *2.HDMI In*2, HDMI Out*1.1 Built-in projector power off protection,Delay time can be modified.1 Built-in wall	AHA/tecom/uni/globus Boach, Shure or Equivalent	30 Nos

| | | screen's power supply.1 DB9 standard learning interface.1 Infrared RS485 bilateral control.1 I/O control computer turn on and off.2 USB In and Out. Mic: 2 handheld and 1 collar wireless mic of good quality. Speaker: 2 speaker of 30 watt each. Speaker should have Line In and Line out, Aux Mic In port. Volume, Mic, Trebile, Bass control. On and off switch. Amplifier: Minimum 60W Amplifier which can be integrated with other audio system. Document Camera: 3 MP Image Sensor, Resolution: 2048x1536, Scan Size: A4, CMOS Sensor, LED Light, Document Format: PDF, WORD, TXT, Image Format: JPG / TIF / PDF / BMP / TGA / PCX / PNG / RAS, Video format: AVI / WMV, OCR. Mounting KIT for Panel.. Accessories HDMI Cable: 10 mtr. Standard 19 core cable, Titanium alloy shell ● 99.99% Oxygen free copper cable core ● Support HDMI 2.0, 1080P, 3D, Sync-Audio and Video ● Professional shielding aluminum foil, High density   woven mesh shield, Anti interference,   wear-resistant and tensile ● Engineering special cable Power cable: 5 mtr.>Resolution   1920 x 1080 (FULL HD) View Area   477(H) x 268(V) mm– 22 inchLuminance, White   250 cd/m^2Contrast Rating 1000:1 (typ.)Viewing Angle   160˚ (H/V)Lamp Life Time 20,000 Hrs (min) Tablet Technology Electromagnetic Resonance Detectable Height   3~10 mmPosition Report Rate138ppsPressure Resolution   1024 LevelCapacitiveTouchTechnology   Projected Capacitive

Detacted object Fingers, or Conductive materialTouch Points10PointsSub-monitor   Non Tablet / 22inch wideDC Adapter (model : CGSW-1203000)   AC100-240V 1.5A 50-60HZ / DC12V 3000mABodySliding cover   Opening/Closing the cover easilySoft wheels   Moving podium with convenience

Adjusing Monitor Angle system (Actuator)   User can set monitor angle as user's wantDimension   659(W) x 1,130(H) x 750(D)Multimedia Controller
UHD HDMI Inputs   3 HDMI INPUT (HDMI 1.4/HDCP1.2 Compliant)UHD HDMI Outputs   3 HDMI OUTPUT (HDMI 1.4/HDCP1.2 Compliant)VGA Out   1 (D-SUB 15P)
Max. Resolution   3840 X 2160 (upto UHD)Pixel Frequency   440MHzComposite Inputs   Video X 2 Composite Output   Video X 1Bandwidth   100MHz Return loss   -30dB; 5MHzSwitch Control Ports   X 4Screen / ELE Control Ports   X 2Screen Relay Controls   X 2
LAN Selector   2 Input, 1 OutputUSB Selector   2 Input, 1 OutputAMP Control Port   X 1 (When using the external amplifire(AMX3030D))RMS Control Module   X 1IR Control PortX 2Serial RS-232 Ports   X 4Power(Adaptor)   12V, 4 | | |

		Weight 1Kg SoundSpeaker Out 40W 4Ω (20W + 20W) StereoInput x 3 (Ø 5.5 Mono Jeak), x 2 (RCA Stereo JACK L/R) x 1 (Ø 3.5 Stereo Jeak) Output x 1 (RCA Stereo JACK L/R), x 2 (Ø 3.5 Stereo Jeak)Laptop Interface Module HDMI x1 / Tablet USB x1 / USB x2 / Sound In x2 / LAN x1/ RCA Jack(3P) / Power x1Digital AmplifierOutput Power (Max) 280W 4Ω (140W + 140W) StereoMicrophone Inputs 8~20mV (3 Input)PC/Laptop Inputs 70mV (2 Input) Audio Inputs 70mV (2 Input)Audio Ouputs 250mV (3 Output)Frequency Response 25Hz ~ 20KHz AC Power 220V to 240V AC, 50/60HzDimensions 88(H) x 482(W) x 223(D) mmWeight 4.8 Kg Wireless MicrophoneFrequency ranges 925.0MHz ~ 932.0MHzType Hand and BeltSimultaneous Channels 38CHFrequency stability ±0.005% (-10~50℃)Frequency response 40Hz ~ 18KHzTHD (1KHz) <0. 9%Signal to Noise ratio100dBDimensions480W x 40H x 220DGooseneck MicrophonePolar Pattern CardioidFrequency Response 150Hz ~ 17KHzSensitivity (0dB=1V/1Pa, 1KHz) -46dBOutput Impedance 200 ohm Balanced, HDMI Capture card Weight (g) 2007" LCD ControllerResolution 800 x480View Area 154(H) x 92(V) mm – 7 inch Interface RS-232Touch Type Resistive OperateSystem Win CE5. 0Power 5V, 1APower DistributorAC Outputs 5CH (MAX 150W) DC Outputs 12V/4A x 4, 9V/3A x1, 5V/1A x1InputAC Input 100 - 240V,50-60Hz 10ADimensions480(W) x 88(H) x 298(D) mm Weight 5kgs **and digital podium should be provided with HDMI capture card .**		
3.	**Client Desktop with OS and antivirus**	**SITC of Client Desktop with OS and antivirus:** Windows 10, 64-bit* Memory: DDR4 4GB or higher, Storage:1TB/2TB HDD (7200 rpm) Integrated Graphics: Yes; Graphics Output HDMI 2.0; of Displays Supported: 1; Discrete Graphics Radeon™ 540, 2GB 6 USB 3.0 ports (Side); RAID Configuration 2.5" HDD/SSD + M.2 SATA/PCIe SSD (RAID-0 RAID-1); Audio (back channel + front channel) 7.1 digital (HDMI); L+R+mic (F); Integrated LAN 10/100/1000; Integrated Wi-Fi Intel® Wireless-AC 9560 + Bluetooth 5.0; Integrated **Bluetooth Yes.**	HP,Lenovo, Acer or equivalent	14 Nos
4.	**Wireless microphone UHF Wireless Lapel + Headworn Mic**	**STIC OF Wireless microphone** **UHF Wireless Lapel + Headworn Mic:** Type Wireless Form Factor Handheld If Wireless, Operating Range (meter) 100 meter If Table Top, Length of Goose-neck (mm) 6 millimeter Polar Pattern / Directionality Cardioid	sennheiser,MX,akg, **Shure,Bosch** or equivalent	30 Nos (14 Lapel + 16 Headw orn)

		Microphone Transducer Type Condenser Inbuilt Speaker No Frequency Response (Hz) 50-15000Hz Equivalent Noise Level (dBa) 0 Signal to Noise Ratio (dB) 0 Electrical impedance (ohm) 0 Sensitivity -50 dBV/Pa (3.15 mV) LED Indicator Available On/Off switch Available Should be able to run 20 channels per frequency band Volume Control Yes Audio Connector Type XLR Casing Material Plastic Power Source 12 V DC NOM. /300 MA Operating Temperature Range (Degree C) 4 Operating Humidity (RH%) 5 Dimension (W x H x L) (mm) 200X42X127 Net Weight (Gram) 340 gram Warranty (Years) 2		
5.	**Wide angle web camera 4K**	SITC OF Wide angle web camera 4K: Type of Camera & Speaker Phone Combination :Stand alone or Integrated Camera WITH STAND Resolution Full HD(1920 x 1080 progressive signal) Compression Format H.264/4K Frame Rate 30 fps Zoom Range Optical NA Zoom Range Digital 3X Field of View (Degree) 120 Controls Settings of PAN , TILT and Zoom No Remote Control No Integrated Speakers yes Auto Focus No UL/CE certification Yes Certifications available Yes Operating Temperature Range (Degree C) 10 - 40 Operating humidity (Rh %) 80 Installation & Commissioning yes On Site OEM Warranty (Year) 2 Years Or equivalent or higher specs which suits to the requirement. This Solution can be offered with Interactive Flat panel. Number of mics should be kept **optional**	Cisco, Sony,lumens logitech, microsoft,intel, or equivalent	30 Nos
6.	**Cables and Connectors**	SITC of HDMI cable, EP to EP cables, and other cables as per system requirement	Dlink,digisolor equivalent	15 Nos

7.	**Full HD PTZ Camera with Accessories for Teacher**	SITC of Full HD PTZ : 4k Broadcast PTZ Camera with min Optical Zoom, min 100 Presets, 60 Frames per Second, Ethernet Out, HDMI Out, 3G SDI Out, Audio In Mic/line, RS232/422/Ethernet Controls, -170° ~ +170° Panning angle, -30° ~ +90° Tilting angle, should support PoE+ or Equivalent specs which suits to the requirement. The proposed Solution OEM must be in Gartner's Leader quadrant of Latest published report.camera should have inbuilt USB port.	Cisco,Lumens,sony ,Panasonic,bosch or equivalent	14 Nos
8.	**Video Conferencing kit for Hi-tech classrooms**	SITC OF Video Conferencing kit for Hi-tech classrooms : Type of End Point 4K Supported Solution with 4K Content Presentation along with Centralized Dedicated 45 Full HD Port MCU Solution (without cascading in 1RU) having 5 Concurrent Conferences and 5 Port Recording Solution. (Bidder may use MCU Facility of NIT Srinagar Existing Network) System Resolution 1080p, 60 fps or 4K or equivalent Type of Camera PTZ Camera Positioning System Automatic Voice Activated Optical zoom 10X System supports sharing of video and graphics content during the video call 1080p, 60fps Number of microphone supplied 1 Wi Fi Connectivity No If Yes, Type of Wi Fi Connectivity NA Recording @1080p on the end point No On Site OEM Warranty (Year) 5: Type of End Point MCU based Does it require mandatory registration with MCU Yes Video Conferencing System Resolution 1080p, 60 fps or 4K or equivalent Minimum Bandwidth Required for Specified video quality at End point/far-site end (Kbps) 2048 Type of Camera PTZ Camera Positioning System Automatic Voice Activated Type of sensor CMOS Camera Control (focusing, brightness, and white balance) Automatic Multiple Camera System in case of Automatic Voice activated Camera Tracking Dual Optical zoom 10X Digital zoom 10X Field of View at zoom (Degree) 65 Pan range Minimum to Maximum (+/- Degree) 100,-100 Tilt Range (Degree) 20, Cord and Connector to be supplied Yes System delivers Full HD video and voice & Full HD content for an overall Full HD experience at specified bandwidth Yes Video coding support ProtocolH.263,H.264, H.265 System has G-722/ G-711/ G-729 or equivalent nt wideband audio coding support Yes System supports sharing of video and graphics content during the video call upto 4K. It is possible to see both the near and far site on one Screen thus making most efficient use of a single display area	Polycom, **Cisco, Sony IPELA** or equivalent	14 Nos

		Yes		
		System is equipped with one or more Omni directional High Definition Microphones as required to cover large conference room Yes		
		Number of microphone supported 4		
		Number of microphone supplied 3		
		Number of camera support from the same OEM 3		
		Number of Ethernet connection points for System supports for RJ-45, 10/100/1000 Mbps Base-T Ethernet connection 2		
		Wi Fi Connectivity No		
		If Yes, Type of Wi Fi Connectivity NA		
		System supports AES encryption video calls; System has Encryption On and Off capability Yes		
		Video Codec shall support 16:9 format Yes		
		Power supply: 230 + or - 10% volts, 50 Hz Yes		
		Shall come with easy to use infra-red hand held remote control / Touch Panel with operating distance Yes		
		All equipment are in compliance with the requirements of ITU-T (SIP Protocol & H Dot 323) Standard related to Video Conferencing Yes		
		System to be IPv6 ready from day one Yes		
		System uses standards based protocols & the offered system is inter operable with any existing H-323 AVC/SVC based VC equipment in a P to P call on VC end point; All H/W and S/W required to make it interoperable is included in the scope of supply Yes		
		Number of Input DVI Ports 0		
		Number of Input HDMI or equivalent Ports 3		
		Number of Input USB Ports 2		
		Number of Output DVI Port 0		
		Number of Output HDMI or equivalent Port 3		
		Number of output USB Port 0		
		Calendering Feature Yes		
		Recording @1080p on the end point No		
		System supplied complete with the following components from the same OEM (a) Codec (b) Camera (c) At least one Microphones with suitable connectivity (d) Remote Control/Touch Panel (e) Data sharing capability using H/W or S/W (f) Necessary Cables Yes		
		Type of Microphone Omni Directional or equivalent or higher specification which suits to the requirement. The proposed solution must be in Gartner's leaders of latest published group system report.		
8.(A)	**Spotlight WIRELESS Advanced Presentation Remote**	Advanced wireless presentation remote goes beyond laser pointing so you can interact with content on the room screen Precisely highlight or magnify specific content right on the screen with the simple touch of a button Track presentation time and set vibration alerts to stay in command until your final slide Navigate your slides without looking down using intuitive forward and back buttons Universal compatibility on most devices, operating systems and leading presentation software such as	LOGITECH/HP OR EQUIVALENT	40 Nos

		Windows, Mac OS, PowerPoint, Keynote, PDF, Google Slides and Prezi Product Dimensions 2.8 x 13.2 x 1.3 cm Batteries: 1 Lithium Polymer batteries required. (included) Item model number 910-004654 Operating System Mac OS Included Components Presenter Remote, Quick Start Guide Aspect Ratio 2.21:1 Batteries Included Yes Batteries Required Yes Battery Cell Composition Lithium Polymer Connector Type Wireless Supports Bluetooth Technology Yes		
9.	**Presenter Server with antivirus**	SITC OF Presenter Server with antivirus : Presenter Server with Studio grade HDMI capture card: CPU - Intel® Core™ i7 processor (7th Generation or higher) RAM: Minimum 16 GB DDR4 or higher OS: Minimum Windows 8 or higher Onboard Graphic Card, HDD Min 2 TB or Equivalent (Optional , If required for proposed solution)	,Lenovo, Acer, HP Or Equivalent	1 No
10.	**Black magic Capture Card**	SITC OF HDMI Capture equipment QNAP TS 451+2G with 4TB x 4 Enterprise SATA Hard Disk, Intel i5 QC 2.0GHz CPU / 4GB RAM max upto 8GB / 2 x GigaLAN / 1x HDMI (Optional , If required for proposed solution)	Intensity pro,nvidea,intel Or Equivalent	2 Nos
11.	**Wired Keyboard Mouse and Monitor (set)**	SITC OF Wired Keyboard Mouse and Monitor (set): Windows® 7, Windows 8, Windows 10 or later; Chrome OS™; Linux® kernel 2.6+; USB port, Connection Type: Logitech non-unifying protocol (2.4GHz) with Nano USB receiver; Wireless Range: 10 meters / 33 feet; Wireless encryption: 128-bit Advanced Encryption Standard (AES) between devices and receiver; Software Support: Logitech Set Point, Low-profile keys; Adjustable keyboard height; Battery: 2 x AAA; Battery Life (not rechargeable): 36 months; Special Keys: 15 function keys accessible through "fn" key, Connect/Power: On/Off power button; Sensor technology: Advanced optical tracking; Battery: 1 x AA; Battery Life (not rechargeable): 12 months	For RACK-valrack,dlink Keyboard& mouse - Logitech, Monitor - Compaq,HP, Microsoft or Or Equivalent	1 No
12.	**KVM switch**	SITC OF KVM Switch: (Number of Computers Controlled-8, Selection Method-Push Button and Hot-Key (PS/2 Keyboard) or On-Screen-Display (OSD), Video-8 x HDB-15 female, Keyboard/Mouse-PS/2 & USB Signal Combined, DDC, DDC2 monitor-Maximum resolution up to 2048 x 1536 @ 65 Hz, Operating Systems Supported-Windows	D-Link ,Aten,allied,kinan Or Equivalent	2 Nos

		98SE/ME/2000/2003/2008/XP/Vista/8/10		
13.	**Audio Mixer with Speaker**	<u>SITC OF Audio Mixer with Speaker:</u> Packs up into a single portable unit, Dual 2-way speaker enclosures with woofers high frequency drivers Lightweight, Class D amplifier produces 300 watts (2 x 150) of stereo power SITC OF Removable 8-channel mixer Four Mic/Line inputs (XLR jacks) for microphone and line level devices Two stereo inputs for stereo line level devices Integrated speaker stand mount Enclosures tilt back for use as floor Monitors .	Yamaha,JBL,akg,samson Or Equivalent	1 No
14.	**Video mixer**	<u>SITC OF Video mixer:</u> Video Input 8x SDI 4x HDMI Computer Graphical Interface 4 via HDMI Video Output 5 x SDI and 1 x HDMI assignable Audio Input 4 x Balanced XLR Audio Output 2 x Balanced XLR Embedded Audio Support Input: Up to 16 channels Output: 4 channels Audio Delay Calibration Up to 16 frames A+V Switching Yes USK 4 DSK 2 x DSK supporting Luma key & Linear key (Key / Fill) Picture in Picture 8 (4 x PIP, 4 x Flex Source) Built-in Monitor Display 17.3" HD TFT LED backlit, 1920x1080 pix Streaming Video Encode H.264 / AVC, Main/ High Profile Configurable Bit-rate up to 10Mbps Streaming Audio Encode AAC-LC Configurable bitrate ranging from 32Kbps to 384Kbps Sampling rate: 48 KHz, 16 bit Streaming Control Web browser UI for configuration and control Socket commands Recording File System FAT, exFAT, NTFS Recording File Format MP4 Recording Setting Control Web UI for system configuration and control	Data video, Ross, Grassvalley, Panasonic ,Sony Or Equivalent	1 No
15.	**Application server with antivirus**	<u>SITC OF Application server with antivirus:</u> Application: Processor: Intel Xeon Processor E7-v4, 3.10 GHz, 8MB Cache or higher. Memory: 16GB Memory (2X8GB) or higher RAID Controller with 1TB X 2 HDD : 8x SATA Drive , Networking facility: 10/100/1000 on board integrated Operating System: Windows 2016 Server or higher	To manage sessions Cisco//HP Server,, Or Equivalent	1 No
16.	**Media server with antivirus**	<u>SITC OF Media server with antivirus</u> : Processor: Intel Xeon Processor E7v4, 3.10 GHz, 8MB Cache or higher. Memory: 16GB Memory (2X8GB) or higher RAID Controller with 1TB X 2 HDD Ports: : 8x SATA Drive for Windows 2013 R2, Networking facility: 10/100/1000 on board integrated Operating System: Windows 2016 Server or higher	Cisco//HP Server, Or Equivalent	1 No
17.	**Image mosaic TV and PC with antivirus**	<u>SITC OF Image mosaic TV and PC with antivirus:</u> 4K Smart Interactive Board of 70" with HDMIPort microphone available in different frequencies.	Cisco Or Equivalent	2 Nos
18.	**HDMI Switcher with**	SITC OF HDMI Switcher with remote.:	Aten,Kinivo,Gefen Or	1 No

		4 in 1 out For switching between inputs	Equivalent	
19.	**External USB Drive 1TB**	To play any external content Ultra-fast data transfers with USB 3.0 High capacity in a compact design Plug-and-play ready for Windows PCs 3 year manufacturer warranty Transferring data at maximum speed with USB 3.0 Using with USB 2.0 now and USB 3.0 when you're ready Using with Windows PCs	WD element,Segate,hp Or Equivalent	6 Nos
20.	**Router**	SITC OF Router: Built-in advanced security, including intrusion prevention, Group Encrypted Transport VPN, and Dynamic Multipoint VPN (DMVPN) Up to 20 VPN tunnels support WAN connection with multiple access options Business continuity with primary and backup connections, including third- generation wireless and ISDN, Four 10/100/1000 Mbps Gigabit Ethernet managed switch ports upgradable to 8 x1G SFP Ports with optional Power over Ethernet (PoE) , EIGRP, HSRP , RIP, OSPF, BGP with 2 free slots after providing asked ports . SSID are both 2.4G/5G.	CISCO, Or Equivalent	1 No
21.	**24 Port Switch (Manageable)- for HUB**	SITC OF 24 Port Switch (Manageable)- for HUB: Dual-purpose uplinks for Gigabit Ethernet uplink flexibility, allowing use of either a copper or fibre uplink; each dual-purpose uplink port has one 10/100/1000 Ethernet port and one SFP-based Gigabit Ethernet port, with one port active at a time; PoE configurations with up to 15.4W per port with L3 Features including RIP,OSPF, BGP , EIGRP, HSRP or equivalent specs with enterprise class Solution. The OEM of proposed solution must in Gartner's Latest published report of Wired and Wireless Solution	Extreme networks,Cisco, Or Equivalent	1 No
22.	**27 U Rack, 1000 MM depth, Tray, Doors and accessories**	SITC OF27 U Rack, 1000 MM depth, Tray, Doors and accessories: 27 U Rack, 1000 MM depth Monitor with Diagonal Screen	HCL/Vero President,valrack Or Equivalent	2 Nos
23.	**White Board- Non Magnetic**	SITC OF White Board- Non Magnetic: 3Ft X 4Ft	Spectron,atenOr Equivalent	1 No
24.	**HDMI Splitter**	SITC OF HDMI Splitter hd: Video output Interface: 4x HDMI Type a Female Impedance: 100-ohm Video Input: 1x HDMI Type A Female HDMI Switcher with remote. 4 in 1 out	Aten 1:4.Storite Or Equivalent	2 Nos

25.	**Small PC Speaker**	SITC OF Small PC Speaker: Remote reference	Jbl,Yamaha,akg Or Equivalent	1 No
26.	**Wi-Fi Printer**	SITC OF Wi-Fi Printer: Print Method: Micro Piezo TM Print head; Maximum Print Resolution: 5760 x 1440 dpi (with Variable-Sized Droplet Technology); Minimum Ink Droplet Volume: 3 pl; Printer Language: ESC/P-R; Automatic Duplex Printing: No; Control Panel: 1.44" Colour LCD; Black Nozzle Configuration: 120; Colour Nozzle Configuration: 59 per Colour (Cyan, Magenta, Yellow); Print Direction: Bi-directional printing, Uni-directional printing	Canon,,HP, Epson Or Equivalent	1 No
27.	**Cables and Connectors**	SITC OF Cables and Connectors: HDMI standard video cable and 2core shield audio cable (other cables and connectors as per requirement of solution);	Dlink,digisol,cisco Or Equivalent	2 Nos
28.	**Tablet**	SITC OF Tablet: Min 10' inch Display, Min 6GB RAM, 128gb internal storage, Qualcomm Snapdragon 835 Processor or Higher, DUAL OS WINDOWS 10 and Android OS 9.0 or higher, 1000mAh Battery, Wi-Fi-enabled.	Samsung, Apple ,hp Or Equivalent	1 No
29.	**Wi-Fi router**	SITC OF Wi-Fi router: Data Transfer Rate: 300 megabytes or above, Download speeds of up to 150 Mbps or Above, GSM frequencies: 2.4 hertz or above Wireless Type: 802.11bgn .	cisco Or Equivalent	1 No
30.	**Recording PC server with antivirus**	SITC OF Recording PC server with antivirus: INTEL corei7-3770 desktop or higher, Relevant motherboard, 16GB DDR3 RAM (4GB DDR3 * 4), (1TB * 5) Seagate SATA hard disk, operating system Windows 8 or higher;	,HP,Dell,Lenovo Or Equivalent	1 No
30(a)	**Recording PC with OS and antivirus**	SITC OF Recording PC with OS and antivirus: Intel core i3 desktop, Memory 4GB DDR4 or higher Graphics Intel® HD Graphics 4000 (integrated), 500 GB HDD, HDMI Out with windows 8 or higher (Optional, If required)	For client output to Recording Machine HP,,Lenovo,Acer Or Equivalent	1 No

31.	**NAS (Network-attached storage)**	PowerEdge R740/R740XD Motherboard, Intel Xeon Bronze 3204 1.9G, 6C/6T, 9.6GT/s, 8.25M Cache, No Turbo, No, HT (85W) DDR4-2133, iDRAC, and Legacy Password, No Energy Star, Chassis with up to 12 x 3.5" HDDs on BP, 4 x 3.5" HDDs on MP and 2 x 3.5", HDDs Flexbay, 1 and 2CPU Configuration, PowerEdge 2U LCD Bezel, Riser Config 1, Ship Mod for Dell EMC NX3240, APCC and TW, PowerEdge R740 Shipping Material, Quick Sync 2 (At-the-box mgmt) Dell EMC Luggage Tag for NX3240, Performance Optimized, 10 Memory Fillers, 8GB RDIMM, 2666MT/s, Single Rank 2666MT/s RDIMMs, Blank for 1CPU Configuration, No Additional Processor, iDRAC9,Enterprise, 10TB 7.2K RPM NLSAS 12Gbps 512e, 3.5in Hot-plug Hard Drive, 100 TB 10K RPM SAS 12Gbps 512n, 2.5in Flex Bay Hard Drive, 3.5in HYB, CARR, PERC H730P RAID Controller, 2GB NV, Cache, Mini card, 6 Performance Fans, 1U Pipe Low Profile Heat sink 1, Dual, Hot-plug, Redundant Power, Supply (1+1), 750W, Desk side Power Cord, G Type, 230V,2M (Nepal, Sri Lanka, India), No Trusted Platform Module 1, Broadcom 57412 Dual Port 10GbE, SFP+ & 5720 Dual Port 1GbE BASE-T rNDC, Windows Storage Servers 2016 Standard Edition, ProDeploy Plus Dell Storage NX Series, 3XXX NAS – Deployment, Pro Deploy Plus Dell Storage NX Series, 3XXX NAS - Deployment Verification, Pro Deploy Plus Training Credits 700, Expires, 1Yr from Order Date, Ready Rails Sliding Rails With Cable, Management Arm, RAID 5 with 3.3TB write-once optical disc cartridge	100 TB Approved Makes: **HP, Netapp, Dell**	1 No
31(a)	**2 TON WITH INVERTER HOT AND COLD SPLIT AC**	<u>SITC OF 2 TON WITH INVERTER HOT AND COLD SPLIT AC:</u> P/F of Inverter technology based Air Conditioner HVAC (Hot and Cold) with following Specifications:- 1. Company fitted Heat Convector. 2. Type: - Split AC, Wall Mounted. 3. Capacity: - 1.80 Ton. 4. Make :- Daikin /IFB 5. Voltage: - 230 Volts. Other Features: - Anti bacteria Filter, Jet Cool, Auto Start, Timer, and Sleep Mode. Complete in all respects including copper pipes, 4-core electric cable, MS stand, drain pipe and 5 KVA wall mount, copper wind, Stabilizer of IFB make(I/P 90-290V and O/P 200-240V). Complete in all respects.	Daikin /IFB or equivalent	2 Nos
32.	**Leased line 100 Mbps)**	SITC OF Leased line **(100 Mbps):** Band Width Charges 100) Mbps internet connectivity (1:1, uncompressed/ pure on clear Channel Annual Rentals. **Also including One time Installation/ Configuration Charges /other charges For the period of three year (Optional , If required)**		1 No

32(a)	**Login/authorization and File transfer /Virtual software contains synchronized web browsing from outside campus**	SITC OF one time installation software configuration charges Access from outside campus for uploading /downloading /LIVE STREAMING of e-lectures. Or Live Streaming and Recoding solution with equivalent or higher feature sets. **Virtual Class Room software, Should be compactable to the System for smooth function in Virtual Class Rooms**		1 No
32(b)	**License**	SITC of WPC/OSP License for 2 way interaction or equivalent Live and On-Demand streaming solution which suits to the requirement with Up to 100 inputs with limited recording and no transcoding (VOD requires additional hardware), Up to 2 transcoded inputs		14 Nos or As required
33.	**VIDEO WALL MATRIX**	SITC OF VIDEO WALL : Multi Colour Video wall display with suppy & Video wall controller 5.4 x 3.6 meter having Pixel Pitch :PH6;Pixel density :27777/M2;Module Resolution :32 x 32;Drive Method :1/8 Scan ; Frame Frequency :60 HZ ;Unit Pixel : Single LED ;Brightness : 6500 cd/m2; Gray Scale : upto 16 Bit/2.81 billion ; Optimum Viewing Angle (V X H) : 140 X 120 ; Cabinet size : (768 x 768 mm) ;Input Voltage : 220 vAC ; Operating Temperature : -20 degree TO - 50 degree centigrade ;Cabinet box : Die cast Almunium,**Mild steel cabinet box;Power Supply : Mean well,G energy,Omiron**;construction of the display : Compatible/suitable for outdoor Installation in open air conditions ; Control System : Inbuilt with software ; Supported Format : Text,Video,Image ; Data Entry : LAN,USB ;Cabinet Box : IP 65 black Matt ,Powder Coated ; Lingustics : Any Language : Construction of the display : Compatible,suitable for outdoor,Installation in open air conditions ; Computer System : core i3,4 GB RAM,500 GB HDD ,Gigabyte LAN ,Nvidia Graphics;1) The inputs include CVBS×2, VGA×2, DVI×1, HDMI×1 , DP ×1 and SDI×1. support input resolution up to 1920×1200@60Hz;2) Provide seamless high-speed switch and fade-in/ fade-out effect so as to strengthen and display picture demonstration of professional quality;3) The location and size of PIP can both be adjusted;4) the screen is stable and flicker free without scanning lines; the images are exquisite and have a good sense of depth;5) Can implement white balance calibration and color gamut mapping based on different features of LEDs used by screens to ensure reproduction of true colors;6) HDMI/external audio input;7) 10bit/8bit HD video source;8) The loading capacity: 2.3 million pixels;9) Support multiple controller montage for loading huge screen;10) Support point-by-point correction technology11) Touch Track facility to be there Input images can be zoomed point-to-point according to	Barco/Delta/Daktronics/ PLANNER/Xtreme Media /Mitsubhishi/Or Equivallent	1 No

		the screen resolution Stablizer;• Low & High Voltage Cut-off Protection		
		• Working Range: 90V - 280V		
		• Capacity: 22AMP		
		• Single phase,10 KVA		
		• Performs in wide Input voltage range		
		• Primary switching technology		
		• Mains turn-on delay		
		• High power efficiency		
		• Inrush current with stand capability		
		1.6 mm CRCA sheet canopy with 5mm thick 40mm width angles for structure, standing rail with Standing protection and ladder.		
		Height of the structure From Ground – 7 feet		
		Frequency: 2.4 GHZ		
		Throughput: 100+ Mbps		
		Range: 2 KM		
		Long-Range Links		
		Maximum RF Performance		
		Powerful airOS® Features		
		Featuring a grid reflector design and single-polarity, narrow-beamwidth performance,		
		Physical - 6.82 mm Pixel Density Physical - 132 x 176=23232 Pix / tile Physical - 21500 Pix / Sq. Mtr. Pixel LED Encapsulation Type SMD 2727 * LED Life 100000 Hours Brightness 7500 nits (cd/m2) Viewing Angle 150 x 140 Input Voltage 100-240V AC, 50/60Hz Power Input Voltage 100-240V AC, 50/60Hz Power Consumption-Max. 594 Watts / Tile Typical Power Consumption-Average 216 Watts / Tile Tile Physical Dimension Depth 150 mm Area 1.08 Sq.-Mtr. Height 1200 mm Width 900 mm Weight 29 kg, 63.8 lbs. (Approx.) Tile Tile Engineering Power Supply G-Energy Cabinet Type Die CastAl Service Access Back Access Ingress Protection IP65 Front		
		IP54 Back Driving IC MBI5124 Environmental Conditions Temperature Range Operating -5° to 50°C Humidity Operating 10 to 90% Data Processing Up to 16 Bit Colors Up to 65536 Refresh ≥3840Hz Contrast 5000:1 LED Display System Type of Wall Die Cast Al 6.82mmPixel Pitch True Color No. of Tiles (W x H) 18 (6x3) Pixel Matrix (WxH) 792 x 528 Total Pixels 418,176, Total LEDs Physical 418,176 Display Dimensions (In Meter) (W x H) 5.4 x 3.6 Meter Clearance required at the back Front access screen - 150mm, Back Access Screen- 600mm Weight Excluding Structure (Approx.) 522 Kgs Aspect Ratio Aspect Ratio 3:2 Diagonal Size (In Inch) 255.5 inch In put Power 420 V, 3 Ph, 50 Hz, Neutral, ground (preferred), 240 V Single Ph, Neutral, ground Max Power consumption 10.692 KW Typical average Power consumption 3.888 KW Signal Input DVI Control System Nova/Colorlight Intensity Control Based on Ambient light / Time –Manual Software		

		XM Player Ver 6.1.0 File formats JPEG, MPEG, BMP, SWF, GIF, DAT Supported Networking Through LAN/WAN		
33(a)	**Electrical DB**	SITC OF Electrical DB : Power distribution box: 18KVA, 3 Phase, IP66 Rates Power, Input 420V AC (Phase to Phase), Output – 230V AC Phase to Neutral or equivalent or higher specs which suits to the requirement (Optional, If required)	Havells,anchor,l&t or equivalent	1 No
33(b)	**LED Controller**	SITC OF LED Controller: The Controller should be able to make all the 4 cubes behave as one logical area. It should be possible to display any or all the inputs on the video wall in any desired configuration. Should be possible to increase the no. of inputs if desired at a later stage. Minimum 4 input and 4 output, Dual LAN, Redundant Power supply. LED Controller to be supported with offered Videowall Solution which suits to the requirement.	**Barco/Delta/Daktronics/ PLANNER/Xtreme Media /Mitsubhishi/Or Equivalent**	1 No
33(c)	**Media player for led screen**	SITC OF Media player for led screen: Android XMPlay 324i Media Player to be supported with offered Videowall Solution which suits to the requirement.		1 Nos
33(d)	**Fiber optic Converter for led screen**	SITC OF Fiber optic Converter for led screen: Fiber optic Converter to work with Video Wall Screen which suits to the requirement		1 No
33(e)	**PC for Server (video wall) software**	SITC OF PC for Server (video wall)Software: i7processor. 2tB HDD, 16GB ram, 19" display, 2GB Display memory or equivalent or higher specs which suits to the requirement	Lenovo / HP / OR equivalent	1 No
33(f)	**Network Switches / routers**	SITC OF Network Switches / routers : network switches/ router along with rack for DS players / server pc and led screen or equivalent or higher specs which suits to the requirement .The OEM of proposed solution must be in Gartner's Leader quadrant of latest published wired and wireless report.	cisco or equivalent	1 No
33(g)	**Dual Pole Structure and Fabrication**	SITC OF Dual Pole Structure and Fabrication: fabrication, concrete/ civil Base and erection of dual pole structure.	Complete job.	

33(h)	**Cat-6 UTP cables**	P/L of underground cat-6 utpArmoured cable. Complete in all respects.)	Dlink,finolax,digisolor equivalent	1000 mtr
33(i)	**Power cable**	P/L Supply and Laying of P 2.5Sq.mm – 3 underground with conduit core power cable Armerd From DB to LED and from Sitch to displays.	Havells,anchoror equivalent	500 mtr
33(j)	**OFC cable in PLB Duct.**	P/L of underground 12 core Armoured Optical Fibre Cable in PLB Duct at a depth of 3 to 4 meters. Complete in all respects.	Sterlite,dlink	1000 mtr
34.	**Digital signage**	SITC OF Digital signage : **Panel Size** 43''**Resolution** 3840 x 2160 dots (UHD) **Brightness** 400 nits or higher **Contrast Ratio(type)** 1200:1 or higher **Respond Time(type)** < 8msor better **Viewing Angel(Min.)** 178° / 178° **Possible Display Type** Landscape& Portrait **Working Hours** 7Day*18Hour **System ConfigurationOS** Android 5.1 or better **DDR** 2GB or more **Memory** 16GB or more **Data Interface WIFI** 2.4G IEE802.11 b/g/n 2T*2R **LAN** RJ45*1 **USB (Host)** USB 2.0*1 USB3.0*1 **AV Interface INPUT** HDMI 2.0*2 VGA*1 VGA Audio in **Output** Headphone Jack*1 **Speaker** **Speaker**8W x2 **Control** **Remote Control** IR **RS23** RS232*1（RJ45） **Feature RTC Controller** YES **Picture Rotation** YES **OSD Rotation** YES **Pixel shift** YES **Language** English **Safety Lock** YES **Environment Temperature** -5 – 40 **Humidity** Working : 20 - 80% (without condensation) Storage : -20 - 60degC **Power Power** AC 230V-264V@50HZ **Power Consumption (Max / Avg in Watt)** ≦120W **Standby** <0.5W (standby mode) **Dimension** 968.2*559*60.9 mm **Bezel width(T/L/R/B)** T/L/R:11.9mm,B:14.9mm or equivalent or higher specs which suits to the requirement (Optional, If required)	Samsung,sony,LG, Panasonic, **Xtreme Media** or equivalent	**30** Nos
34(a)	**Media players for displays**	SITC OF Media players for displays : Media Players to work with proposed Digital Signage Solution or equivalent or higher specs which suits to the requirement. Make should be compatible with video wall		30 Nos
35.	**Content management software**	SITC OF Content management software: **VIDEO WALL/digital signage Software Features / Web Based Remote Management** Should able to control the signage network via web interface without installing any	Reputed OEM, Barco, Delta, DakTronics,	1 No

| | | software from any remote or central location,and should accessible throughMobile or Tablet **Multi Regions/Zones** Divide the screensaccording to regions& populate images, videos, flash etc in these regions using drag-and-drop interface **Content Support: Supports playback of most media formats** Video Format: wmv, avi, mpg, mpeg, flv, mov, mp4, mkv, vob, 3gp Image Format: jpg, bmp, png, gif, tiff,tif Document File Format: Pdf Text: Show static as well as scrolling text (Tickers) Office Doc Format: ppt, pps, pptx, ppsx, doc, docx Audio Format: mp3, wav, **Content Scheduling** Schedule content to single display, Schedule content to multiple displays, Future Scheduling – Schedule content to play in future , Recursive Scheduling – Repeat the same schedule in future on hourly, daily, weekly, monthly or yearly basis **Playback available for the following dynamic data/ sources, Dynamic Sources / Data,** Webcasting: Show feed of live events received via a streaming server, Database / Spreadsheet / XML Integration (Customization) Feed from social media sites Twitter or Facebook RSS (Really Simple Syndication) Feed: Changeable interval-based updating of RSS Feed Webpage - HTML / HTML5 + JavaScript (Depends on Player Browser) **Text Scroll / Image Scroll** Support for multilingual character set – Unicode, Formatting support - Font Colour, Font size, Bold, Italic etc, Scroll Direction - Right to left, left to right, top to bottom and bottom to top Add Image along with text (Customization) Image Transitions **Content Creation.** Animated 2D content from Images (Customization) Animated 3D content from Images (Customization) Animated (flash/HTML based) templates, Animated (flash/HTML based) templates , Non animated industry wise templates (Customization) **Extensible** Extensible: Add gadgets like clock, weather, calendar, etc. **Audio Files,** Audio Files: Option to mute audio for each media file in the playlist + Add background audio file **Display Modes & Resolution** Mode Support: Portrait &Landscapes Resolution: 4K support Preview content (layout) before scheduling **Smart Download** Resume: Resume downloads in case of connectivity issues, Bigger files are divided in smaller chunks for transfer. In case of connectivity issues only the last chunk is lost Progress Bar for content download available Secure:All the data transfer between server and player should be done over a 1024-bit encrypted connection Secure:All the data transfer between server and player should be done over a 1024-bit encrypted connection Download during predefined Interval only Download during predefined Interval only, Bandwidth management-Manage bandwidth through throttling and setting display wise limits , Content Push - Server should be able to push | Planner, Xtreme media or Equivalent | |

| | | content to display when content for the display changes, Content Pull - Media players should able to download content from server at predefined Intervals, Should able to download content to one node and distribute locally to other media players, File hash (MD5) validation before playback **Emergency/Instant Messages** Override scheduled data & current playback on the screen(S) with emergency messages **, Local Playback** Download, store and play content & schedules locally on the player **Play Multiple Screens in Sync and Time Syncing,** Ability to play content in sync across multiple screens. Software should automatically check the lag and adjust itself to get in sync with other screens,Each player should keep its system time in sync with server (Customization) **USB Support / Offline Mode** USB Support: Sync media, schedule content, report, etc. through USB for displays without connectivity (Customization **Access Levels and User management,** Inbuilt media approval mechanism to allow supervisors to approve the content before publishing to the players Inbuilt media approval mechanism to allow supervisors to approve the content before publishing to the players Administrator can create users/user groups and assign rights to multiple users, Access can be provided for a player, group of players or each module like playlist creation, layout management, reports etc. **Live Monitoring** Able to See content being played on any display in real time from any remote location Should able to schedule the screenshot event for any screen, should upload screenshots of that screen to the central server taken at the pre-defined interval **Remote Player Management:** Remote Software Upgrades: Software updates and patches shall be remotely sent from the central server to the media players View active players on your network & enable or disable any player on the network at any time, Able to manage display storage remotely, manually delete content on any player remotely via server,in case of display storage crosses the assigned storage limit, it shall smartly delete the content which is archived. Should able to set the different shutdown time and reboot time for all days of a week for the remote players, Reboot on a button click shall available, Should able to set the different shutdown time and reboot time for all days of a week for the remote players, Reboot on a button click shall available, Ability to change all display specific settings from server (Web CMS) **Remotely Control Display** Remotely Turn Display On / Off **Digital Signage Add-ons: Other Addons**Token& Queue Management, Meeting Room Management (Customization), Should support Touch Screen **Reporting, Logs & Audit Trail,** Should able to generate reports of Proof-of-play and | | |

		content/media played on the displays, Display UP/Down Report: User should able to generate the report for each display to get the information about its online and offline duration. User Activity: System keeps a track of each user's activity on the CMS with his location (IP address). Bandwidth Usage: Display wise downloading bandwidth and user wise upload bandwidth reports available. Logs: Player logs for troubleshooting and knowledge **Signage Dashboard,** Dashboard view of the network connectivity status between the media players and the central server, Players current IP Address, last access & last download, **Clustering & Load Balancing** Clustering & Load Balancing: Should allowcontent to be replicated on secondary servers to create multiple nodes for content distribution resulting in load balancing & high availability failover mechanism, **Designed for the Cloud** Designed for the Cloud: Server should able to host on the cloud Server is hosted on the cloud and hence there is no downtime or limit on the no. of players on the network. Also, we can host a dedicated server on the cloud for our clients **Watchdog,** Watchdog: Controller application should keepa track of player status and restarts it or reboots the system if required in case the system hangs **Media:Transparency**Image Transparency Video Transparency Text / Scroll Transparency **Overlapping Regions Playback Control** Schedule multiple layouts simultaneously along with their order of playback Go to previous / next layout - Using IR remote, keyboard, gesture, touch **Server (CMS) Options:** Using local / dedicated server - Support for virtual / physical instance, load balancing, replication etc. Supported Server OS: Linux / Windows **Layout Creation (CMS) Options** Using SaaS - Use our server on the cloud to manage your display network, Using SaaS - Use our server on the cloud to manage your display network, No server - Directly from the device - Using IR remote or Keyboard / Mouse (Customization -Standalone player)		
36.	**Laptop for sever**	<u>SITC OF Laptop for sever :</u> Processor: 10th Gen Intel Core i7-10510U Processor 1.8 GHz (8M Cache, up to 4.9 GHz) Memory& Storage: 16GB 2133MHz LPDDR3 on board RAM with| Storage: PCIe Gen3x4 NVMe 1TB M.2 SSDGraphics: Discrete NVIDIA GeForce MX250 GDDR5 2GB VRAMDisplay: 14" LED-backlit FHD (1920 x 1080) 16:9 Anti-Glare Display, 3.5mm-thin bezel with 90% screen-to-body ratio, 178° wide-view technology, 100% sRGB, PANTONE Validated\Operating System: Pre-loaded Windows 10 Home with lifetime validity Design & battery: Spun-Metal finish| Thin & Light Laptop| Laptop weight 1.5 Kg | 70Whrs 4-cell lithium-polymer battery | Battery backup upto 8 Hours.	Asus/hp/ dell/Lenovo or equivalent	2 Nos

		Keyboard &ScreenPad Plus: 12.6" touch display with 178° wide-view technology | Keyboard : Full-size backlit with 1.4mm key travel, ErgoLift hinge with 5.5° keyboard tilt I/O Ports: 1 x USB 3.1 Gen 2 Type-C, 1 x USB 3.1 Gen 2 Type-A, 1 x USB 3.1 Gen 1 Type-A, 1 x HDMI, 1 x Audio combo jack, 1 x MicroSD card reader, Comes without CD-Drive Other: HD IR webcam with Windows Hello support | Face recognition login | Wi-Fi 6 (Gig+) (802.11ax) + Bluetooth 5.0 (Dual band) 2*2		
37.	**60kVA Online UPS**	Supply, Installation, commissioning and Testing of **3In-3out Online Ups 60 KVA** standalone/rack mountable working on, IGBT based double conversion digitally controlled microprocessor system, with with SNMP card & LCD display with Two year warrantyThree Rating in KVA (KVA) 60.0 KVA Technology IGBT-PWM without inbuilt isolation transformer Input Power Three phase 300 V - 450V sinewave,50Hz Output power 3 Phase 400V +/-1% with alternative user setable setting of 380V +/-1% 50 Hz Backup time (Minutes) 1 hour Minimum VAH (VAH) 38400 Warranty for UPS (Years) 2 Degree of Protection IP20 20% Overload limit for minimum 10 minutes:Yes Overall Efficiency (%) >/=90% 50% Overload limit for minimum 1 minutes Yes GENERIC **Rating in KVA (KVA) 60.0 KVA** Technology **IGBT-PWM with inbuilt isolation transformer** Input Power Three phase 300 V - 450V sinewave,50Hz Output power 3 Phase 400V +/-1% with alternative user setable setting of 380V +/-1% 50 Hz Backup time (Minutes) 15 Minimum VAH (VAH) 38400 Warranty for UPS (Years) 1 Movable trolly for Batteries With trollery & rack Warranty for battery 1 Degree of Protection IP20 Cabling 5 meters for input and out put Without Paralleling kit for synchronizing Without Installation and Commissioning Yes CONSTRUCTIONAL Minimum thickness of M.S. Sheet Enclosure duly painted (mm)1.0 Type of Battery SMF-VRLA conforming to JISC:8702(Pt.I,II&III) F**UNCTIONAL** Maximum overshoot and Under shoot of output rated	Emerson,APC , Delta, or equivalent	2 Nos

		voltage 4		
		Voltage Regulation from no load to full load (%) < / = 3%		
		20% Overload limit for minimum 10 minutes Yes		
		Overall Efficiency (%) >/=90%		
		Total Harmonic Distortion(THD) (%) Maximum 3%		
		50% Overload limit for minimum 1 minutes Yes		

PROTECTION

Protection for under voltage at battery terminal at 10.5V per 12 V battery.   Yes

Protection of Over voltage,Short Circuit & over load at UPS output terminal   Yes

METERING AND INDICATIONS

Digital Metering in UPS for AC Input Voltage,Output AC Voltage,Current,Frequency,Battery Voltage and Current   Yes

Indicators for mains presence, Battery charging and discharging,Output Over Load, Low Battery Voltage   Yes

REPORTS AND CERTIFICATION

Damp Heat : in accordance with IS:9000(part 5/sec.2)1981 at Temperature of 40 degree C,two cycles of (12+12) hours each 2007)   Yes

Dry Heat Test : in accordance with IS:9000 (part 3/sec.5)1977 (reaffirmed 2007) at 55 degree C for 16 hrs   Yes

Cold Test : in accordance with IS:9000 (Part 2/Sec.4)1977 (Reaffirmed 2007) at -10 degree C for 4 hrs.   Yes

Availability of the Type Test Report from Central Govt. /NABL/ILAC Accredited lab covering all technical requirements.   Yes

Specifications:

1. **Technology: IGBT-PWM**
2. **AC Input Voltage :360V AC~450V AC   ± 5V AC, Three Phase**
3. **Output Voltage :400V AC Phase to Phase ± 3% on 100% unbalance load.**
4. **Voltage Regulation ± 1%**
5. **Frequency 50Hz ±0.05Hz(Crystal Controlled)**
6. **Waveform Pure Sine wave**
7. **Efficiency > 92 % for 360V DC**
8. **20% overload limit for min 10 minutes.**

Note: (1.The job includes termination and connection of all input & output cables with proper thimbles/lugs complete in all respects.)

(2. the ups should provided with in-built isolation transformer)

<u>or equivalent or higher specs which suits to the requirement (Optional, If required)</u>

37(a)	**Batteries**	SITC OF SMF 12V 100Ah batteries for backup approx. 45-60 mins at 85% load **Note: including suitable size of battery bank rack** <u>or equivalent or higher specs which suits to the requirement (Optional, If required)</u>	Exide powersafe,amaron quanta,microtek or equivalent	100 Nos
37(b)	**Rack**	SITC OF Rack, Interlink, DC Cable and UV Coil Breaker <u>or equivalent or higher specs which suits to the requirement (Optional, If required)</u>	Complete job.	2 Nos
37(c)	**Parallel cable**	P/L OF Parallel Cables As per required specification and size <u>or equivalent or higher specs which suits to the requirement (Optional, If required)</u>	Havells,I&t,finolex or equivalent	2 jobs
38.	**100 kva DG Set**	<u>**Providing, Installation, Testing And Commissioning of 3_Phase 100Kva DG Set with AMF Panel (including changeover of suitable rating) :**</u> OUTPUT CAPACITY RATING/ PHASE Nominal Rated Capacity (KVA) 100 No of Phase Three Phase ENGINE Make of Engine CUMMINS Model Number of Engine 6BTAA5.9-G13 OR EQU Capacity of Engine (cc) 5900 Engine Power (kWm) 118.5 ISI Marking to IS :10001 for engine No BIS license No, if applicable N/A Type of Engine cooling Liquid Cooled Type of governer Mechanical Class of governer A1 Number of cylinders (nos) 6 No of Strokes (nos) 4 Rated RPM of Engine (RPM) 1500 Overload capacity for one hour for every 11 hours continuous running at full load (%) 10 Specific Fuel Consumption (gm/kWh) 215.3 Starting voltage (volt) 12 ALTERNATOR AC GENERATOR(ALTERNATOR) Make STAMFORD AC GENERATOR(ALTERNATOR) model Number 100 KVA FRAME Rating of AC Generator (KVA) 100 Power Factor of AC generator 0.8 Efficiency at rated Power factor at 75% of full Load 91.3 Compliance of Alternator to IS:13364(part-1) Yes Type of alternator Brushless	KOEL/sudhir/Rahim/Mahindra/Cummins or equivalent	1 No

Voltage Regulation Grade   VG 3
Alternator IP Rating   IP 23
Class of Insulation   H
CONTROL PANEL
Control Panel   Manual
IP Rating of Control Panel   IP 53
ACOUSTIC ENCLOSURE
Sheet Thickness 1.6 millimeter
Thickness of Foam   40 millimeter
Density of Foam for sound insulation   28
Noise level at 1 meter (dB)   75
BATTERY
Battery Type & Specification   Low Maintenance free to IS: 14257 for high cranking performance
Battery capacity (Ah)   100
No of batteries   1
TEST REPORTS WARRANTY / INSTALLATION & COMMISSIONING
Warranty   2 year
Installation & Commissioning   With Installation
Agreed to STC of the Product   Yes
INCLUDING CIVIL BASE
NOTE:- The DG Set must be supplied with Separate 1000 Liters of Storage Tank (MS Steel Tank). Complete in all respects.
<u>or equivalent or higher specs which suits to the requirement (Optional, If required)</u>

S.No.	DESCRIPTION	SITC Work specifications (Optional, If required)	QTY/Unit
39	**OFC cable in PLB Duct.**	P/L of underground 12 core Optical Fibre Cable in **PLB Duct** at a depth of 3 to 4 feets through **HDD BORING**. Complete in all respects.	3000 Mtr
40	STP CABLE	P/F of Shielded Twisted Pair (STP) cat 6e armoured cable in iron conduit. Complete in all respects.	3000 Mtr
41	Power cable	P/L of 4 core 10 sq mm multi stranded armoured copper cable in PLB (permanently lubricated) Duct of 40mm dia. Complete in all respects.	1000 Mtr
42	Power cable	P/L of 3 core 2.5 sq mm multi stranded armoured copper cable in recessed/surface in suitable size of high grade PVC conduit pipes. Complete in all respects.	1500 mtr
43	Power cable	P/L of 3 core 4 sq mm multi stranded armoured copper cable in recessed/surface in suitable size of high grade PVC conduit pipes. Complete in all	500 mtr

		respects.	
44	**Power cable**	Supplying and laying of one XLPE insulated & PVC sheathed aluminum conductor armoured power cable of 1.1kv grade of following size in the existing RCC/HUME/STONEWARE/METAL or direct in ground including excavation, sand cushioning, protective covering and refilling the trench etcas required. **Including DWC HDPE pipe as per IS14930 (Part-II)** complete with fitting and accessories in ground at the depth of 75cm laying of cable including excavation and refilling the trench etc as required. Complete in all respects. 3.5×185 sq mm cable	400 Mtr
45	**Bus bar panel**	Supplying, installation, testing & commissioning of factory assembled Dust & Vermin Proof wall / floor mounted LT cubical type compartmentalized panel of **400A TPN Aluminum Busbar panel** (CPRI Approved) fabricated out of 2 mm thick MS sheet, **300mm Deep** with locking arrangement, cable alleys, bus bar chamber etc powder coated self supported suitable for 3 phase 4 wire, AC supply, i/c supplying & fixing following accessories as detailed below, i/c bus bars connections / inter connections to MCCB compartments , arrangement for cable entry, supports, end terminations, 2 Nos. earthing stud inter connection with 25mm x 5mm GI strip (externally), painting, etc. complete as required. **The compartmentalized panel consisting of 3 Nos of outgoing compartments for 200 A MCCBs with a minimum space of 250 mm between each outgoing compartments.**	1 Nos
46	**TPN MCCB**	P/F OF 250 Amps. 4P MCCB of breaking capacity 36 kA (Cat No: LV525343) with thermal magnetic release ICU= Ics= 100%, necessary spreader terminals and phase barriers on incoming & outgoing side complete as required (for out going).	1 Nos
47	**TPN MCCB**	P/F OF 160 Amps. 4P MCCB of breaking capacity 25 kA (Cat No: LV510317) with thermal magnetic release ICU=Ics=100%, necessary spreader terminals and phase barriers on incoming & outgoing side complete as required (for out going).	2 Nos
48	**TPN MCCB**	P/F OF 63 A Amps. 4P MCCB of breaking capacity 25 KA (Cat No: LV510305) with thermal magnetic release ICU=Ics=100%, necessary spreader terminals	

		and phase barriers on incoming & outgoing side complete as required (for out going).	2 Nos
49	**3 phase 415 Volt Digital voltmeter and 3-phase Ammeter**	Supply and Installation of **3 phase 415 Volt voltmeter and 3-phase Ammeter with separate indicators for each phase** mounted on top of the front side of panel including all connections.	3 No
50	**Extended rotatary handle panel mounted**	Supply and Installation of **Extended rotatary handle panel mounted** for MCCBs with clear indication of ON/OFF /Trip Indication and having IP 54 degree of protection. **(For 100/160/250A MCCBs)**	5 Nos
51	**EARTHING**	P/F of Maintenance free Chemical Earthing using copper Electrode of size 76 mm dia, 03 meter long connected with 50X6 mm Copper internal strip complete with excavation, civil works, cast iron cover with back fill compound along with **60 kg bag of Back fill compound/SOR Compound (highly conductive, non corrosive moisture retaining chemical)** complete. The voltage between Neutral & Earth not to exceed 0 volts & IR value less than 1 ohm. The earth resistance shall be as per IS 3043. Copper strip of size 32 mm X 5 mm be connected to main Distribution board	7 Nos
52	**Earthing strip**	Supplying and laying 25 mm X 5 mm copper strip at 0.50 metre below ground as strip earth electrode, including connection/ terminating with nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of brass nut bolt & spring washer spaced at 50mm)	200 Mtr
53	**Earthing bus**	Providing and fixing **Earth Bus** of 50 mm X 5 mm copper strip on surface for connections etc. as required	7 No
54	**Mcb double pole**	Supplying and fixing 63 A rating, 415 V, 16kA "C"curve, **Four Pole** Miniature Circuit Breaker suitable for Heavy inductive load ,in the MCB DB complete with connections, testing and commissioning etc. as required.	10 Nos
55	**Mcb four pole**	Supplying and fixing 63 A rating, 240/415 V, 16kA "C"curve, four Pole miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.	5 Nos
56	**Mcb double pole,**	Supplying and fixing 5 A to 32 A rating, 240/415 V,	

	Mcb single pole	10 kA, "C"curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.	
		a) Single Pole	50 Nos
		b) Double pole	30 Nos
57	Power panel	Supplying and fixing following way, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required.(But without MCB/RCCB/Isolator)	
		a) 8 way Double Door	10 Nos
		b)12 way Double Door	10 Nos
58	Electric Distribution board	P/F of Electric board point with earth wire in 4 mm multi stranded PVC copper wire in 1" 2mm PVC pipe/ channel of Plaza/Alba Make to be laid underground to be recessed in the wall with following accessories of modular series to be fitted on metallic box of suitable size (recess type). Complete in all respects including resurfacing of room plaster. 1. I/O box RJ45 connector 2 No. 2. 15 Amp Socket FT 2No. 3. 5 Amp, 5-pin Socket 2No. 4. Indicator 1No. 5. Fuse 1No.	50 Nos
59	Power cable	P/F Wiring for light point / fan point /exhaust point / call bell point with 1.5 sq. mm FRLS PVC insulated Copper Conductor Single Core Cable in surface / recessed medium class PVC Conduit with Modular Switch, Modular Plate, Suitable GI box &earthing the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable etc as required.	
		a) Group C	20 Nos
60	Led lights	P/F of 2 ft*2ft LED luminaries with URG <19 recess mounted with high lumen output with durable housing with Al heat sink with Diffuser to give glare free light with removable driver. (Make Phillips TYPE RC380B LED30S-6500G4 L60 W60 PSU OD OC	10 Nos
61	Led lights	P/F of high lumen LED 6500k (4ft ft) wall mounted LED batten, extruded aluminum heat sink provided for efficient heat dissipation & integrated electronic driver complete in all respects. Complete in all respects. (Make Phillips TYPE: BN 100C LED40S-6500 PSU L120 GR)	10 Nos
62	OFC Route Marking	Installation of OFC Route Marker with supply & transportation charges	50 Nos

<u>ADDITIONAL CONDITIONS AND REQUIREMENTS</u>

1. The Bidder should be a manufacturer or their dealer specifically authorized by the manufacturer to quote on their behalf for this tender as per manufacturer authorization form and Indian agents of foreign principals, if any who must have designed, manufactured, tested and supplied the equipment(s) similar to the type specified in the "Technical Specification". Such equipments must be of the most recent series/models incorporating the latest improvements in design. The models should be in successful operation for at least one year as on date of Bid Opening in India and is engaged in R&D activities.

2. The Indian Agents of foreign manufacturers/ suppliers quoting directly on behalf of their principals for items appearing in the restricted list of the current Foreign Trade Policy must be registered with DGS&D. One Indian Agent cannot represent two different foreign principals for the same item in one tender.

3. The bidder should have executed at least one similar order successfully during the preceding three financial years. The details should be incorporated in the performance statement form along with documentary evidence.

4. Details of service support facilities that would be provided after the warranty period should be submitted in the Service Support Details Form.

5. That, in the case of a Bidder not doing business in India, the Bidder is/or will be (if successful) represented by an Agent in India who shall be equipped and able to carry out the Supplier's maintenance, repairs and spare parts, stocking obligations prescribed by the conditions of the contract.

6. That the Bidder and OEMs will assume total responsibility for the fault-free operation of equipment, application software, if any, and maintenance during the warranty period and provide necessary maintenance services for five years after end of warranty period if required.

7. Bidders who meet the criteria given above are subject to be disqualified, if they have made untrue or false representation in the forms, statements and attachments submitted in proof of the qualification requirements or have a record of poor performance, not properly completing the contract, inordinate delays in completion or financial failure, etc.

8. Other things being equal, preference shall be given to firms who or his principal have supplied and installed similar system at any CSIR/ ICAR/ ICMR/DAE/ DRDO/ DST/DBT/other Govt. or autonomous research Labs in India.

9. Any additional bid participation criteria / eligibility conditions etc. mentioned in the Technical Specifications sheet will also form part of the Qualification Requirements along with those mentioned in this chapter.

10. The quantity of the items may vary. The quantity mentioned above may increase or decrease.

11. The items quoted need to be compatible with the facility to be installed in classroom.

Brief Scope of Work

NIT is aspiring to enhance the learning process of NIT students using diverse techniques like Fiber based smart cum Smart cum Virtual Classroom s with Smart cum Virtual Classroom and Smart Classrooms. The scope also includes archival of all Smart cum Virtual Classroom lectures for student reference. Srinagar is a hilly terrain region therefore the solution shall be compatible with satellite network for better network feasibility in future therefore bidder must have an experience of 2-way interactive Smart cum Virtual Classroom solution on internet lease line connection/ VSAT platform.

The Bidder is required to work for Implementation and Maintenance of 30 classrooms out of which 14 Classrooms are equipped with Smart cum Virtual Classroom facility with 1 Centralized Server Room and 16 classrooms are equipped with smart Classroom facility

The NIT, Srinagar initiative broadly includes the following components:
- Smart Class Solution including Podium, Interactive Panel.
- 2-Way fiber based Interactive Smart cum Virtual Classroom Solution
- Centralized server will be located in server room provided by NIT in the same campus

- Smart cum Virtual Classroom lectures will also be located at the centralized server room location

Smart Classroom solution will comprise of the following. The detail technical specifications of the same are mentioned in BOM:-

Smart Classroom will be equipped with state of the art equipment including Podium, Interactive Panel, and UPS.

Smart cum Virtual Classroom solution will comprise of the following. The detail technical specifications of the same are mentioned in BOM:-

A. Centralized Server room

Centralized Server Room will be equipped with Smart cum Virtual Classroom, Local Audio Video Library, centralized live audio video streaming server, and Genet power backup.

I. Smart cum Virtual Classroom

Smart cum Virtual Classroom equipment including Interactive TV, HD Camera, Audio system, Servers, Smart cum Virtual Classroom Hardware and software with recording facility and DIGITAL PODIUM with RFID.

II. Local Audio Video Library

All the recorded lectures of Smart cum Virtual Classroom 14 nos. of Smart cum Virtual Classroom will be stored and made accessible to all the authorized students within and outside the NIT campus with internet facility.

Centralized Server Room will be connected to all smart cum Smart cum Virtual Classroom s and smart classrooms within the NIT Campus over fiber network.

B. Smart cum Virtual Classroom

Smart cum Virtual Classroom will be equipped with state of the art Smart cum Virtual Classroom equipment including Podium, Interactive Panel, and wide angle web camera, Computer, Microphone, UPS and Smart cum Virtual Classroom Software

Technical Solution Requirements for 2-Way interactive Fiberbased Smart cum Virtual Classroom and Smart Classroom Solution

1. The successful bidder's responsibilities will include Supply, Installation, Testing and Commissioning of Smart Classroom, Smart cum Virtual Classroom, Centralized Server Room Equipment, and requisite software and Fiber connectivity.

2. Successful bidder should provide fiber network for the proposed solution which allows the scalability within the NIT campus. The solution should be compatible with satellite network that will connect Smart cum Virtual Classroom s outside the NIT campus for future scalability point of view.

3. The successful bidder will have to provide Training to Teachers and other designated staff for use of Smart Classroom and Smart cum Virtual Classroom equipment and Delivery of lecture.

4. The solution should enable lectures to be conducted at the Smart cum Virtual Classroom, which will be set-up at a specified location, and be delivered live in High definition (HD)/Standard definition (SD) via Fiber to the entire network of smart classroom and smart cum Smart cum Virtual Classroom, simultaneously. The solution should also with compatible with 2-way interactive VSAT based network for future point of view.

5. The solutions must offer the facility of viewing live as well as stored (archived) sessions at the Smart cum Virtual Classroom s.

6. The Bidder should ensure that all the Smart cum Virtual Classroom lectures are getting connected in all classrooms as well as on web server.

7. The solution must offer the facility of storing and editing the recorded lectures in Centralized Server Room. Editing of the lectures in the smart classrooms and to provide the proper content for archival at centralized server will be the responsibility of NIT.

8. The bidder should provide Local Audio Video Library in which all the recorded lectures will be stored and made accessible to all the authorized students within the campus and should also be available on the web server.

9. Solution must offer secured delivery and playback capability of the live and recorded content.

10. Solution must have capability to incorporate suitable educational content in the form of Audio-Visual presentations, interactive flash animations etc.

11. Solution must have capability to show live images of all connected remote Smart cum Virtual Classroom s simultaneously for interaction.

12. The technology solution proposed must enable the fibre connection from Smart cum Virtual Classroom of Centralized Server Room to Remote Smart cum Virtual Classroom s within the NIT Campus. Also it should support connection from Smart cum Virtual Classroom to remote Smart cum Virtual Classroom s outside the NIT Campus over lease line connection

13. **The equivalent make should be of reputed multinational company and should be compatible with the solution ,The company should provide MAF & OEM Certificates . MAF for Video Conferencing Unit, Interactive Flat Panel, UPS, Storage is Mandatory.**

14. The initial bidding is for a 2D enabled Smart cum Virtual Classroom system. However, the technological solution should be stereoscopic 3D enabled. In case of this requirement, commercials for the implementation will be discussed separately.

15. Bidder should have ability to manage all smart cum Virtual Classroom s from Centralized Server Room.

16. Bidder should provide solution which includes white-board view in Smart cum Virtual Classroom s for drawing and solving problems in a demonstrative manner, which will enable the sessions to emulate a traditional classroom-like atmosphere, which the students are familiar and comfortable with.

17. The bidder will be responsible for training of teachers on conducting sessions using Smart cum Smart cum Virtual Classroom s and Smart Classrooms Solution.

18. Bidder should set up a centralized server room helpdesk service for uptime queries of all deliverables. Helpdesk Team will work in general shift (10 am to 6 pm) with 2 skilled resources having CCNA Certificates and good knowledge of Video Conferencing and Streaming Solution.

19. The solution should enable High definition (HD)/ Standard definition (SD) for 2 Way Audio Video Interactivity on Fiber platform.

20. Successful bidder shall provide and deploy manpower resources who are skilled and experienced in their respective trades, deemed necessary for the prescribed Scope of Work in the NIT and who are competent to execute or manage/ supervise the work in a proper and timely manner. The company should keep at least 2 persons for period of two years to train the staff, which will be deputed by NIT for maintenance of **Smart cum Virtual Classroom**.

21. **Implementation timeline for the project will be three months from the date of issuing Purchase order to Bidder. Bidder has to submit project plan for the same in pert chart.**

22. **Integration of proposed solution with NIT Srinagar Existing Network has to be done by Bidder without any additional charges to NIT . Bidder may use NIT Srinagar MCU Solution for seamless operations of Virtual Classrooms.**

23. Bidder should provide Centralized Server Room having centralized live audio video streaming server with backup and Local Audio Video Library in which all the recorded lectures will be stored and made accessible to all the authorized students over the network within the campus. The same stored lectures will be made available on the web server for access to the students outside the campus.

24. Centralized Server Room should have the capability of Recording, Editing and Storing Smart cum Virtual Classroom lectures.

25. The training should be provided from the company to NIT teaching staff and other technical staff for six months.

26. The Bidder(Lead bidder or consortium) should have an Average Annual Turnover of at least INR 40 Cr with 2cr. Solvency over the last three financial years (FY 2016 - 17, 2017 - 18, 2018 - 19). Above mentioned turnover value should be from experience in similar projects/IT&ITes from Central/State Government OR Government Municipal body. Turnover of at least INR 40 Cr with 2 Cr. Solvency over the last three financial years (FY 2016 - 17, 2017 - 18, 2018 - 19). Above mentioned turnover value should be from experience in similar projects/IT&ITes from Central/State Government OR Government Municipal body. Bidder must be ISO 9001:2015, ISO 20000 -1: 2011, ISO 27001:2013, CMM Level 3 certified.

27. Certificate from statutory auditor or CA certified provisional figures clearly specifying Average Annual Turnover for specified years

28. The Lease line Service Provider will be decided by the Committee constituted by Institute for monitoring the said project and will be binding upon the contract to accept the recommendations of that committee for lease line service provider.

29. **The makes should have standard (UL,CE & BIS) certificates.**
30. **The vender/bidder should provide Manpower at least two persons for two years.**

Scope of Work for internet lease line:

To provide 20 Mbps Internet connectivity .The Internet connectivity should have fully dedicated (1:1), unshared & High Quality 20 Mbps symmetric bandwidth without any compression factor through Optical Fibre. Installation, commissioning, configuring of the link and hardware (Modems and Router etc). Maintenance support service (24 hours and 7 days a week) for Bandwidth and equipment. The bidder is required to maintain the link for a minimum period of one year, further it can be extended, based on requirement and satisfactory services upto three years, year 05.

Term of Reference (TOR) & Service Level Agreement (SLA):

Service provider will be required to sign Service Level Agreement (SLA) having the following:

1.Packet Losses: Less than 1% (Average over 1000 ping). Network Availability: More than 99.5 % per month.

2. Reports for performance, monitoring /usage to be submitted by the ISP on weekly or monthly basis or as per requirement of institute.

3. In case of the above parameters going out of specifications, INSTITUTE will be compensated adequately in respect of the extended time for the loss of hours in service. Also, if services are not found satisfactory, INSTITUTE reserves the right to cancel the contract with –one-month notice.

4. In case connectivity from Fibre cable is failed, the same connectivity speed will have to be provided through wireless line by the service provider. 99.5% Uptime shall be calculated as, (Total Time – Down Time) X 100 /Total Time. Deduction in payment will be made for downtime in the quarterly bills raised by the Service Provider (SP).

5.The services shall be provided 24 hours & 7 days in a week.

6. The bidder will be responsible for undertaking any civil/electrical work etc., involved from commissioning to the completion of the project, at his cost.

7. The service should include fully meshed any to any Internet network, network designing, last mile, bandwidth, installation, configuration, hardening, maintenance support, integration with LAN/WAN, proactive monitoring and reporting, change management, migration, training etc., with service level agreement (SLA) binding the Bidder / SP to maintain uptime and application/service quality commitments.

8.Design, develop, implement, and manage an Internet service in locations mentioned in scope for a secure, scalable, resilient and reliable, total Wi-Fi network

9. All Sites shall be able to directly connect to any other site over the Wi-Fi network. Full-mesh connectivity is desired.

10. Obtain all necessary right-of-ways and permits for construction of pathways and installation of telecommunications cabling necessary to implement the proposed solution. SP should take necessary permission INSTITUTE will assist for the same. Provide a low-latency, highly reliable, high-speed Internet service. The connection shall provide to INSTITUTE is able to conduct business operations as per the specified bandwidth requirements and as defined by agreed upon Service Level Agreements (SLA).

11. The proposed connection shall be capable of meeting the defined performance standards throughout the entire term of the contract.

12. Network integrator for the installation, configuration management, commissioning of Internet link, establishing automatic switch-over from primary link to the backup link and vice-versa.

13. Vendor/bidder should have fully functional 24x7x365 Customer Service Centre in Delhi. ☐ Installation and Commissioning Charges paid on Acceptance of Installation Report.

14. Payment will be made quarterly in arrears for Annual recurring charges (ARC) after issuing of necessary invoice and submission of monthly reports including SLA while one time charges (OTC) would be paid after successful commissioning of the link. In case of termination of services, the payment will be made on pro rata basis for the duration for which the services were provided.

15. Taxes: The percentage of Tax All the taxes, duties, levies, must be quoted in clear terms separately. If the taxes are not mentioned separately, it will be presumed that the rates quoted are inclusive of taxes

During AMC period, SLA and penalty for Internet Links is as follows:

S.No.	Link Availability(Quarterly basis)	Penalty
1	100% to 99.5%	NIL
2	Below 99.5%-Up to 98.5%	2% of quarterly lease charges
3	Below 98.5%-Up to 97%	5% of quarterly lease charges
4	Below 97% -Up to 95%	7% of quarterly lease charges
5	Below 95%	10 % of quarterly lease charges