ANNEXURE – I

TECHNICAL BID COMPLIANCE STATEMENT

S.No.	Description	Comply Yes/ No.	Page No. of the document	Remarks
	VENDOR ELIGIBLITY			
1	Experience in supply of equipment's of similar nature (copies of purchase/work order costing 1 crore, (or two of 75 Lakhs) completion certificate from end user(Govt/PSU/Corporate) and successful operation certificate from the end user to be attached) during last 3 years			
2	Proof for financial turnover for the last two years (Audited financial statement for the year 2017-18, 2018-19 – Receipts & payments, Profit and Loss and Balance sheets countersigned by Auditor).			
3	Proof of ISO-9001 for quality.			
4	Self-Declaration Letter stating non blacklist by PSU/Govt Dept./Corporate, Acknowledge Letter			
5	3 year Warranty and spares support to 10 years			
6	Authorization certificate from manufacture in case of authorized dealer (OEM)			
7	Integrated Schematic Diagram for integration of proposed equipment			
8	Proof to supply of professional broadcast standard equipment to IITs/IIMs/IISc/CSIR/State/Central Universities for minimum value of Rs. 15 Lakhs.			

ANNEXURE II – FINANCIAL QUOTE

Note: Specifications of each items are given below and rate should correspond to the specification.

S.NO	ITEM NAME	QTY	Rate per Unit	Total amount without GST	GST	Grand Total
1	4K Pan-Tilt-Zoom Camera	3				
2	PTZ camera remote controller	1				
3	75 inch 4K TV	3				
4	32 inch HD TV	1				
5	Hand-held Wireless Microphone with diversity receivers	6				
6	Lapel Wireless Microphone with diversity receivers	4				
7	Analog audio mixer	1				
8	Gooseneck microphone for announcement					
9	Digital Video production Switcher With Multi-Viewer Output	1				
10	Multi-channel recorder	1				
11	Professional Monitor	1				
12	Audio Delay Unit	1				
13	Up/Down cross converter	2				
14	HDBaseT to SDI	3				
15	SDI to HDBaseT	1				
16	Professional Studio Speakers	2				
17	Passive speakers	4				
18	Power Amplifier	1				
19	Audio Splitter	1				
20	Network video streaming server cum recorder	1				
21	Studio Headphone	2				
22	HDMI Distributor	1				
23	Teleprompter with support of PPT	1				
24	Tripod for Teleprompter	1				
25	LED Light - from Ceiling including Ceiling Mount	4				
26	Fresnel Light	2				
27	LED Light Control Unit	1				
28	On Air Display	1				
29	HDMI MATRIX SWITCH and components- One set, Including cables and wall plates	2				
30	Installation & Commissioning	1				
	OPTIONAL					
31	Ceiling Array Microphone	2				

ANNEXURE – III

Item wise specifications:

S.NO	ITEMNAME	SPECIFICATIONS
1	4K Pan-Tilt- Zoom Camera	4K PTZ Camera with integrated pan-tilt support, Type : 1/2.5 or 1/2.3" MOS/CMOS Integrated 4K PTZ camera with 4K output via HDMI / IP /LAN, 3G HD-SDI output, 1600 TVL resolution or better in 4K mode and 1000 TVL resolution in Full HD Minimum Illumination : 1.6 lux or Better Optical Zoom : 20x or Better Clear Image Zoom 4K : 1.5x, FHD : 2x or Better Focal Length f=4.4 mm (Wide) to 88.0 mm (Tele) Minimum Object Distance : 80 mm (Wide)~ IP Video resolution :3840x2160, 1920x1080, 1280x720, 720x576, 720x480, 640x360 or Better Maximum Frame Rate : H.264 : 60fps, H.265 : 60fps or Better NDI®|HX Capability should be there Audio Input 2 Channel 4K Video Output : HDMI x1 and IP (streaming) x1 HD Video Output : 3G-SDI x1, HDMI x1, IP (streaming) x1 External Sync. Input : BNC x1 Camera Control Interface VISCA RS-422 RJ45 (In/Out) VISCA over IP RJ-45 S700 PTP RJ-45
2	PTZ camera remote controller	Protocol : IPv4, RS-422, RS-432, Visca Connection : Serial : Up to 5 cameras or more IP : Up to 10 cameras or more Adjustment functions : Pan /tilt, Zoom , Focus, Iris, Gain, white balance, Black balance Pre-set Memory : up to 16 pre-sets per camera or more
3	75 inch 4K TV	75" 4K UHD Certified Android LED Display Should have minimum 4 HDMI inputs
4	32 inch HD TV	32" HD LED Display , should have minimum 2 HDMI inputs
5	Hand-held Wireless Microphone with diversity receivers	Frequency response 80-18000 Hz; Nominal impedance 150 Ohm; or better power supply AA Batteries, Sensitivity in free field – 40mV/Pa; Min terminating impedance – 1000 Ohm. XLR interface. RF power 30 Milliwatt or more.
		Wireless lapel mic unidirectional system with belt pack

6	Lapel Wireless Microphone with diversity receivers	
		Transmitter and rack mount type receiver.
		- The transmitter supports lapel and head worn mic
		• The transmitter should operate on AA size batteries • RF Power 30 mw or better • The working range between transmitter and receiver should be a minimum of 30 mtr. • Receiver
•	•	- S/N ratio 110 dB at 40 kHz or better
		- Total harmonic dispersion less than 0.9%
		- Frequency response-18Hz to 18 KHz or better.
		- Transmitter
7	Analog audio mixer	12 input analogue audio mixer with mic/line input, 2 x Stereo input, input gain control, HF/MF/LF Frequency,
8	Gooseneck microphone for announcement	Microphone connector:XLR 3M,XLR 5M; Impedance :< 100 Ω; Frequency response (Microphone):50 Hz - 20 kHz; Pick-up pattern: cardioid
9	Digital Video production Switcher With Multi- Viewer Output	HD-SDI Digital Video Switcher--6 or more HD-SDI & minimum 2 HDMI input with auto synchronization of all inputs & combination of output HD-SDI & HDMI. Should have PGM, Chroma Key. If converters are needed, include them for Chroma Key. Embedding of analog audio to PGM should be possible.

SL.NO: 10 - MULTI CHANNEL RECORDER SPECIFICATIONS:

Multi-channel recorder	Video Formats	Single Channel Mode: (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60 (4K) 4096 x 2160PsF 23.98, 24, 25, 29.97* (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60 (UltraHD) 3840 x 2160PsF 23.98, 24, 25, 29.97* (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60 (HD) 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60 (HD) 1080i 25, 29.97, 30 (HD) 1080PsF 23.98, 24, 25**, 29.97** (HD) 720p 50, 59.94, 60 Multi-Channel Mode: (HD) 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60 (HD) 1080i 25, 29.97, 30

		(HD) 1080PsF 23.98, 24, 25**, 29.97**
		(HD) 720p 50, 59.94, 60
	Codec Support	Single Channel Mode:
		Apple ProRes 4444 XQ, up to 2K/60 fps
		Apple ProRes 4444, up to 30 fps
		Apple ProRes 422 (HQ)
		Apple ProRes 422
		Apple ProRes 422 (LT)
		Apple ProRes 422 (Proxy)
		Avid DNxHD HQX (220x)*
		Avid DNxHD SQ (145)*
		Avid DNxHD LB (36)**
		Avid DNxHR HQX up to 4K/30 fps
		Avid DNxHR SQ up to 4K/30 fps
		Avid DNxHR LB up to 4K/30 fps
		Multi-Channel Mode:
		Apple ProRes 4444, up to 30 fps
		Apple ProRes 422 (HQ)
		Apple ProRes 422
		Apple ProRes 422 (LT)
		Apple ProRes 422 (Proxy)
	Codec Container	Apple ProRes .MOV
		AVID DNX MXF or .MOV
	Removable Storage	2x slots, AJA SSD media Pak 256, Pak 512, Pak 1000, Pak 2000
		Pak-Adapt-eSATA*, Pak-Adapt-CFast*
	Video Input Digital	4x 3G-SDI, SMPTE-292/296/424, 10-bit (12-bit input supported)
		4x Fiber LC*, 3G-SDI, SMPTE-297, 10-bit
		4K/UltraHD 4:2:2 or 4:4:4 (4x BNC or Fiber LC*)
		Dual Link 4:2:2, 4:4:4 (2x BNC or Fiber LC*)
		Single Link 4:2:2, 4:4:4 (1x BNC or Fiber LC*)
		1x HDMI standard type A connector
		HDMI v2.0
		4:4:4 RGB 8/10/12-bit (deep color)
		4:2:2 YCbCr 8/10/12-bit
		4:2:0 YCbCr 8-bit
	Video Output Digital	x 3G-SDI, SMPTE-292/296/424, 10-bit
		4x Fiber LC* 3G-SDI, SMPTE-297, 10-bit
		4K/UltraHD 4:2:2 or 4:4:4 (4x BNC or Fiber LC*)
		Dual Link 4:2:2 or 4:4:4 (2x BNC or Fiber LC*)
		Single Link 4:2:2 or 4:4:4 (1x BNC or Fiber LC*)
		1x HDMI standard type A connector
		HDMI v2.0
		4:4:4 RGB 8/10/12-bit (deep color)
		4:2:2 YCbCr 8/10/12-bit
		4:2:0 YCbCr 8-bit
		HDR Infoframe generation as defined in CTA-861.3 and HDMI v2.0a
	Audio Input Digital	16-Channel, 24-bit SDI/Fiber embedded audio, 48 kHz sample rate, synchronous

		8-Channel, 24-bit HDMI embedded audio, 48 kHz sample rate, synchronous 8-Channel, AES/EBU via (1/2x DB-25 TASCAM pinout)
	Audio Input Analog	8-Channel, 24-bit A/D analog audio, 48 kHz sample rate (1x DB-25 TASCAM Pinout) +24 dBu full scale digital +/- 0.2 dB 20 Hz to 20 kHz frequency response
	Audio Output Digital	16-Channel, 24-bit SDI/Fiber embedded audio, 48 kHz sample rate, synchronous 8-Channel, 24-bit HDMI embedded audio, 48 kHz sample rate, synchronous 8-Channel, AES/EBU via (1/2x DB-25 TASCAM pinout)
	Audio Output Analog	Stereo unbalanced headphone jack (1x 3.5mm jack) with volume control 8-Channel, 24-bit D/A analog audio, 48 kHz sample rate (1x DB-25 TASCAM pinout) 2-Channel unbalanced 2x RCA connectors
	Time code	SDI RP188/SMPTE 12M via SDI BNC LTC input (1x BNC) LTC output (1x BNC)
	Reference Input	External, 2x BNC Looping, nonterminating Black burst or tri-level sync
	Network Interface	10/100/1000 Ethernet (RJ-45) Embedded web server for remote control via REST Video Confidence Monitor via Web Interface Clip upload/download via Web Interface in DATA-LAN mode Configuration and Transport Control via WEB Interface
	Machine Control	RS-422, 1x DE-9 female connector, Sony 9-pin protocol 9-pin D-connector pinout is as follows:
	User Interface	Rotary selector knob Dedicated, backlit transport controls and menu buttons Large 1280 x 720 TFT LCD display with Video Monitor and Menu/Status Overlays
	Closed Captioning Support	CEA-708, CEA-608
	File System Support	HFS+, exFAT
	Accessories need to Included	1 No of Packing Dock & 2 No of 1TB SSD

11	Professional Monitor	Professional monitor. Should have minimum - 2 x HD-SDI inputs (auto detect) with active loop through output , 1x HDMI input , 1 x composite input, 1x Stereo analog audio input,
12	Audio Delay Unit	Audio Delay Box Balanced/Unbalanced input Audio Delay Box for up to 700ms (about 17 frames) audio delay calibration, Volume attenuating 0 ~ 60dB

13	Up/Down cross converter	Up to 1080 50p / 59.94p/60p) supporting 3G, HD-SDI, HDMI and VGA to connect HDMI/VGA from computers and take HD-SDI to the switcher with area of region (adjustable)	
14	HDBaseT to SDI	Converts HDBaseT to 3G-SDI, Configure via USB port and supplied Mini-Config software IR IN and OUT, Extend uncompressed SDI signals up to 100m over Cat 5 (or better) cable, RS-232 device control connection	
15	SDI to HDBaseT	Converts 3G-SDI to HDBaseT, Configure via USB port and supplied Mini-Config software	
16	Professinal Studio Speakers	Low Frequency Driver	5" (127mm) Cone Woofer
		High Frequency Driver	1" (25mm) Titanium Dome Tweeter
		LF Amplifier	40W
		HF Amplifier	27W
		Crossover	2.5kHz
			LF: 24dB/Oct
			HF: 24dB/Oct
		Frequency Range	50Hz-40kHz(-10dB)
		Maximum Sound Pressure Level (SPL)	101dB
		Connectors	1 x XLR Input, Balanced
			1 x 1/4" Phone Input, Unbalanced
			1 x Power Input
		Input Impedance	10 kOhms
17	Passive speaker	Professional compact powered speakers of minimum 80 watts RMS. 8"/10" (2-way active speaker system) with minimum one XLR input & Loop through. Frequency Response- 45Hz- 20 KHz or better Power Handling Capacity 100 watt (60 watt LF & 40 watt	
18	Power Amplifier	Dynamic output power 4 ohms: 2 x 120 watts Dynamic output power 8 ohms: 2 x 60 watts Dynamic output power bridged 8 ohms: 240 watts Output power RMS 100 volts: 2 x 120 watts Minimum impedance load per channel: 4 ohms	
19	Audio Splitter	Inputs	2 x XLR 3-pin balanced main
			4 x XLR 3-pin balanced channel inputs
			2 x 1/4" TRS balanced channel inputs
		Outputs	2 x XLR 3-pin balanced main outputs
			4 x XLR 3-pin balanced channel outputs
			2 x 1/4" TRS balanced channel outputs
		Frequency Response ± 3dB	10 Hz to 130 kHz
		Signal-to-Noise Ratio (SNR)	>95dBu (unweighted, 22 Hz to 22 kHz)

		Total Harmonic Distortion (THD)	0.003% typical at +4 dBu, unity gain
		Input Impedance	40 kOhms balanced
			20 kOhms unbalanced
		Output Impedance	100 Ohms
20	Network video streaming server cum recorder	H.264 Video Streaming server & recorder. Network video streaming server (H.264), supports HD-SDI, SD-SDI, HDMI, 2CH XLR/RCA audio in.	
21	Studio Headphone	Studio Headphone to monitor the recordings Minimum (500 MW) with 6.5 mm/ 3.5mm Audio jack with passive noise cancellation	
22	HDMI Distributor	Professional class HDMI Distributor with 1 input and 4 output	
23	Teleprompter with support of PPT	Software-Standalone System with standard software license for one machine with one year support including updates i	SOFTWARE FEATURES: •Multi-language Support •Dual Screen •In-built text editor •Import Word/Html •Import .txt Files •Story Preview •Alignment •Print •Find/replace •Font Size selection •Adjustable Scrolling speed •Mirrored/ Unmirrored Prompting •Story Progress bar •Font Color Selection •Background color Selection •Prompt PowerPoint •Prompting Images/Scan •Bracket Handling •Windows based software
		Tripod mountable hardware slide support for camera with 2 risers, one height adjustable mirror housing with 1/2 stop mirror glass, 1 Dual display graphic card and 19" prompter display (LED Monitor), Presentation Remote, Desk Control (Does not include computer hardware or Tripod)	
24	Tripod for Teleprompter	Tripod (75mm) and suitable Accessories	
25	LED Light- from Ceiling including Ceiling Mount	LED Cool Light (120 watts) Dimmable with lamp (6000*K), 4 Leaf Barn Door, with 3 meter cable	
26	Fresnel Light	COB-LED Cool Light (100 watts) Dimmable with lamp (3000*K/6000*K), 4 Leaf Barn Door, with 5 meter cable	
27	LED Light Control Unit	DMX Console with DMX Distributer – 8 - Channel, DMX c	
28	On Air Display	Customized 7 segment On Air LED display	

29	HDMI MATRIX SWITCH and components- One set, Including cables and wall plates	Refer to annexure 4
30	Installation & Commissioning	Installation & integration charges including Video Cables, Audio Cables, Convertor, Connectors, Rack and other installation materials. The installation should be neat & professional. Please refer the enclosed image for installation standard.
	OPTIONAL	
31	Ceiling Array Microphone	Ceiling Mic Array Analog-X 1 Array (3 Channels), Ceiling Mic Array Analog-X 1 Array (3 Channels),. Bundle includes Qty 1 White color Mic Capsule, Qty 1 Analog Junction Box, Qty 1 Analog Interface Box.

8x8 HDMI Matrix Switcher:

Shall provide a matrix switcher that shall support minimum of 8 inputs and 8 outputs for distribution and routing of HDMI Signal at resolutions up to 4K/60 with 4:4:4 chroma sampling, 8 Bit Per Color	
Shall provide a digital backplane with a data rate of 18 Gbps or better and Support HDMI 2.0 Signal Type	
Shall support HDR	
Shall support Audio de-embedding in its output and should have Audio Breakaway support at minimum one of its Audio outputs to Feed it to the Audio System	
Shall include automatic management of EDID communication between connected devices	
Shall include Authenticate and maintain continuous verification of HDCP key exchange between connected sink and source devices and support and Support HCP 2.2 at its input & Output	
Control Ports: Ethernet & RS-232	
Shall provide physical buttons on front panel for creating ties within the matrix switcher in case of any emergency	

Wallplate Tx & Rx:

Wallplate switcher/transmitter shall have one HDMI input and one VGA input for Laptop Connectivity	
Receiver shall have 1 HDMI input for connecting a local PC	
Shall support Signal extension for video, audio, and power up to 230 feet (70 meters) over a shielded CATx cable	
Shall Support computer and video resolutions up to 1920x1200, including 1080p/60 and 2K at its input	
Shall support scaling at its output, rates from 640x480 to 1920x1200, including 1080p/60 and 2K	
Shall support Audio embedding & De-embedding	
EDID and HDCP Management to support multiple Laptop connectivity	
Remote Powering Capability	
Shall support Auto switching, including last-connected input and user-selectable priority.	

4K/60 HDMI Twisted pair Transmitter with Audio Embedding:

Shall Provide an HDMI twisted pair transmitter that shall support the extension of video, audio, and control over a shielded CATx cable	
Input : Shall provide one HDMI input for digital video signals with or without embedded audio	
Shall Support HDMI 2.0b specifications include data rates up to 18 Gbps, HDR, Deep Color up to 12-bit, 3D, and HD lossless audio formats	
Audio Input: Shall support embedded digital audio on HDMI input and Shall provide a dedicated analog audio input connection one 3.5 mm stereo mini jack for audio	
Shall provide communication connections for AV device control - bidirectional RS-232 pass-through or bidirectional IR pass-through	

Shall provide signal transmission distance capability of 330 feet (100 meters) for all supported video resolutions using a shielded CATx cable without any compression	
Shall support High Dynamic Range – HDR video	
Shall support computer and video resolutions up to 3840x2160/60 at 4:4:4 chroma sampling, 8 Bit	
Shall support RGB and YCbCr digital video formats	
Shall be HDCP 2.2 compliant with backward compatibility for earlier HDCP versions	
Shall accept local power and remote Power	

4K/60 HDMI Twisted pair Receiver:

Shall Provide an HDMI twisted pair Receiver that shall support the extension of video, audio, and control over a shielded CATx cable	
Shall provide one CatX for digital video signals and HDMI Output	
Shall Support HDMI 2.0b specifications include data rates up to 18 Gbps, HDR, Deep Color up to 12-bit, 3D, and HD lossless audio formats	
Shall provide communication connections for AV device control - bidirectional RS-232 pass-through or bidirectional IR pass-through	
Shall provide signal transmission distance capability of 330 feet (100 meters) for all supported video resolutions using a shielded CATx cable without any compression	
Shall support High Dynamic Range – HDR video	
Shall support computer and video resolutions up to 3840x2160/60 at 4:4:4 chroma sampling, 8 Bit	
Shall support RGB and YCbCr digital video formats	
Shall be HDCP 2.2 compliant with backward compatibility for earlier HDCP versions	
Shall accept local power and remote Power	

Twisted Pair Extender for USB Peripherals:

Shall Provide a transmitter (Wallplate Version) and Receiver for extending signals from USB peripheral devices such as human interface devices, imaging devices, mass storage devices, and other USB devices over a single CATx cable in a point-to-point configuration or via a Gigabit Ethernet network.	
Shall support extension of USB peripheral devices up to 330 feet (100 meters) from the host device over one CATx twisted pair cable	
Shall to provide extension of USB peripheral devices up to 660 feet (200 meters) from the host device through a Gigabit Ethernet switch	
Shall allow up to four receivers to be paired with a single transmitter via an IP network using a Gigabit Ethernet switch for future expansion	
Shall be compatible with up to five Gigabit Ethernet switches to provide extension of USB peripheral devices up to 1,980 feet (600 meters) within an IP network	
Shall support USB 2.0, 1.1, or 1.0 peripherals	
Shall support USB 3.0 peripherals that can operate at USB 2.0 rates	
Shall support data transfer rates up to 480 Mbps or better	
Shall provide peripheral emulation for a virtual connection of a keyboard and mouse to the host computer	
Each USB port shall provide 5 VDC, 500 mA power	

Two Input USB Switcher:

Shall Provide a two input USB switcher that allow switching between multiple host devices and multiple USB peripherals	
Shall support USB 2.0, 1.1, or 1.0 peripherals	
Shall support data transfer rates up to 480 Mbps or better	
Shall provide peripheral emulation for a virtual connection of a keyboard and mouse to the host computer	
Shall have a RS-232 Passthrough and Control Port to control via the Control Processor	
Each USB port shall provide 5 VDC, 500 mA power	

Control Processor & User Interface:

Shall Provide an Ethernet-enabled control processor for the purpose of remotely controlling, monitoring and troubleshooting connected AV equipment and AV systems.	
Shall Provide minimum 6 RS-232 ports	
shall have a RJ-45 jack to support control of minimum 28 devices over ethernet	
Shall support minimum 7" Touchpanel as the User interface and it should interact with the Control Processor directly on the local network	

HDMI Cable (3' & 6'):

Cable shall conform to Premium High Speed HDMI cable performance standards	
Shall be 4K/60 verified	
Shall feature minimum 28 AWG cable and gold-plated connector	
Shall support 18Gbps and HDR Signals	

Shielded Twisted Pair Cable & Plugs:

Cable shall support minimum 475 MHz bandwidth at distances up to 330 feet	
SF/UTP design	
Shall have Solid Core Conductor with minimum 24 AWG	
Cable should be tested and verified to meet performance requirements set by HDBaseT Alliance	
RJ-45 Plugs should be compatible with the Cable suggested	
RJ-45 Plugs shall be shielded with metal strain relief and ground bonding	
Plugs should have gold plated contacts and cable alignment guide	