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CORRIGENDUM-I

(Tender No. HPSEDC/RC/Digi-Comm/2K26-3013)

HPSEDC published e-tender for Rate Contract for Peripherals for Digital Communication, Collaboration and Learning.

Based on the queries received from the prospective bidders, the revised specifications at **Annexure A**, responses along with clarifications/ revise clauses are at **Annexure B.**

Last date for bid submission is extended from 29/09/2026 to 31/10/2026 till 02:30 PM and same will be opened on 02/11/2026 at 02:30 PM.

Data Controller,
HPSEDC

ANNEXURE A

REVISED SPECIFICATION AFTER PRE-BID

The specifications mentioned hereunder are the minimum requirements after incorporation of the approved pre-bid clarifications/ responses. Bidders are encouraged to offer better specifications. The onsite warranty of all equipment shall be three years unless a different warranty is expressly stated against an item.

Item No. 1 – Full HD Webcam

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Resolution	1080P@30fps or better	
2	Sensor	2 MP CMOS Sensor or better	
3	Field of View	78 degrees or better	
4	Minimal Illumination	10 Lux	
5	White Balance	Auto	
6	Camera bracket	bracket with damper	
7	Backlight Compensation	Should support Backlight Compensation	
8	Digital Noise Reduction	2D & 3D Digital Noise Reduction	
9	Video Output	Should support USB 2.0 Video output suitable for software-based video conference	
10	Video Format (USB)	1080P@30fps/25fps, 720p@30fps/25fps, 960x540p@30fps/25fps, 640x360p@30fps/25fps	
11	Built in Microphone	Should have a built-in microphone array to pick up sound equally from all directions, unique noise reduction algorithm to accurately present your voice.	
12	Input Voltage	5V (USB power supply)	
13	Max. Power Consumption	1.5 W or less	
14	Certifications	BIS Certification Required	
15	Warranty	Three years warranty	

Item No. 2 – 4K Webcam with digital zoom

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Resolution	4k@30fps or better	
2	Sensor	8 MP CMOS Sensor or better	
3	Zoom	5x or higher	
4	Field of View	100 degrees or better	
5	Minimal Illumination	0.5 Lux	
6	Shutter	1/30s ~ 1/10000s or better	
7	White Balance	Auto, Indoor, Outdoor, One Push, Manual	
8	Camera bracket	bracket with damper	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
9	Backlight Compensation	Should support Backlight Compensation	
10	Digital Noise Reduction	2D & 3D Digital Noise Reduction	
11	HDR	Should Support High Dynamic Range	
12	Preset	Should have 3 Presets on Remote control	
13	Resolution	Should support 4K Ultra HD@30fps/25fps encoding output, and should be down compatible with 1080p,720p.	
14	Video Output	Should support USB 3.0 Video output suitable for software-based video conference	
15	Auto Focus Lens	Should be completely customizable auto focus non-distortion lens, view angle up to 100°, should support e-PTZ.	
16	Built in Microphone	Beamforming 2 microphone-array with noise suspension and automatic gain algorithm	
17	Audio Pickup	4 meters or more	
19	Remote control	Parameters of the camera should be controllable using IR remote	
20	Interface	1x USB 3.0 Type C or more	
21	Input Voltage	5V (USB power supply)	
22	Certifications	BIS Certification Required	
23	Warranty	Three years warranty	

Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Sensor	1/2.8", CMOS, Effective Pixel: 8 MP or higher	
2	Optical Zoom	12x or higher	
3	AI-Tracking Modes	Presenter Tracking, Auto Framing	
4	Horizontal Field-of-View	65 degrees(W) ~ 7.5 degrees(T) or better	
5	Vertical Field-of-View	Vertical FOV: The bidder shall declare the widest and tele-end vertical FOV. No separate minimum vertical-FOV value is prescribed, subject to compliance with the revised diagonal-FOV requirement and demonstration of suitable conference-room coverage.	
6	Diagonal Field-of-View	Diagonal field of view: At least 71° at the widest position. Horizontal, vertical and tele-end FOV shall be declared by the bidder.	
7	Horizontal Rotation	Horizontal pan range: At least ±170° (340° total), or wider.	
8	Vertical Rotation	Vertical tilt range: At least -30° to +90°, or wider.	
9	Number of presets	Preset positions: At least 2 user-configurable camera presets, recallable through the supplied remote, controller or software. The total number of supported presets shall be declared; higher OEM-standard capacity is acceptable.	
10	Video S/N	≥50Db	
11	Video Signal	4K@30fps or better	
12	Video Encoding Format	Video encoding/output: Through USB/UVC, the camera shall support 4K at a minimum of 30 fps using MJPEG and/or H.264/H.265. YUY2 or an equivalent uncompressed output shall be supported at applicable resolutions.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
13	Control Interface	Control interface: At least one industry-standard camera-control interface using RS-232, RS-485 and/or IP over RJ45 shall be provided. USB/UVC control is also acceptable where supported. Required protocol documentation and cables/adapters shall be supplied.	
14	Video Output	Video output: At least one digital video output through USB 3.0/UVC or HDMI shall be provided. RJ45/IP video output shall be required where IP streaming is offered. All cables/adapters required for the proposed solution shall be supplied.	
15	Video Streams	Video streams: Where IP streaming is offered, at least one configurable IP video stream shall be supported. Dual main/sub streams may be offered as per OEM design and are not mandatory.	
16	Sream Resolution	Stream resolution: For IP streaming, the primary stream shall support at least 1920 × 1080. The supported secondary-stream resolution, if any, shall be as per OEM design and declared by the bidder.	
17	LAN	LAN/PoE: At least 1 × RJ45 Ethernet port. IEEE 802.3af PoE or IEEE 802.3at PoE+ shall be acceptable. Any required injector or power supply shall be included.	
18	Operation Systems	Windows/Android/Mac OS/Linux	
19	Input Voltage	DC 12V	
20	Current Consumption	Power/current: The bidder shall declare the OEM-rated input voltage, maximum current and maximum power consumption. A fixed 2 A limit is not mandatory; maximum power consumption shall not exceed 24 W, and all required power accessories shall be supplied.	
21	Power Consumption	24W (Max)	
22	Operating Temperature	0° to 40° degrees Celsius	
23	Storage Temperature	-20° to 60° degrees Celsius	
24	Certifications	BIS Certifications Required	
25	Warranty	Three years warranty	

Item No. 4 – 4K Video Conferencing Camera with 20x Optical Zoom

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Sensor	1/2.8", CMOS, Effective Pixel: 2 MP or higher	
2	Optical Zoom	20x or higher	
3	AI-Tracking Modes	Presenter Tracking, Auto Framing	
4	Horizontal Field-of-View	50 degrees(W) ~ 3 degrees(T) or better	
5	Vertical Field-of-View	30 degrees(W) ~ 2 degrees(T) or better	
6	Diagonal Field-of-View	Diagonal field of view: At least 60° at the widest position. The tele-end diagonal FOV shall be declared by the bidder; a narrower tele-end FOV is acceptable.	
7	Horizontal Rotation	Horizontal pan range: At least ±170° (340° total), or wider.	
8	Vertical Rotation	Vertical tilt range: At least -30° to +90°, or wider.	
9	Number of presets	User can set up to 255 presets (10 presets on IR remote)	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
10	Video S/N	≥50Db	
11	Video Signals	4K@30fps or better	
12	Video Encoding Format	Video encoding/output: Through USB/UVC, the camera shall support 4K at a minimum of 30 fps using MJPEG and/or H.264/H.265. YUY2 or an equivalent uncompressed output shall be supported at applicable resolutions.	
13	Control Interface	Control interface: At least one industry-standard camera-control interface using RS-232, RS-485 and/or IP over RJ45 shall be provided. USB/UVC control is also acceptable where supported. Required protocol documentation and cables/adapters shall be supplied.	
14	Video Output	USB 3.0, HDMI	
15	Operating Systems	Windows/Android/Mac OS/Linux	
16	Input Voltage	DC 12V	
17	Current Consumption	2A (Max)	
18	Power Consumption	24W (Max)	
19	Operating Temperature	0° to 40° degrees Celsius	
20	Storage Temperature	-20° to 60° degrees Celsius	
21	Certifications	BIS Certifications Required	
22	Warranty	Three years warranty	

Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Sensor	1/2.8" CMOS, Effective Pixel: 8 MP or higher	
2	Optical Zoom	12x or higher	
3	AI-Tracking Modes	Presenter Tracking, Auto Framing	
4	Horizontal Field-of-View	65 degrees(W) ~ 7.5 degrees(T) or better	
5	Vertical Field-of-View	Vertical FOV: The bidder shall declare the widest and tele-end vertical FOV. No separate minimum vertical-FOV value is prescribed, subject to compliance with the revised diagonal-FOV requirement and demonstration of suitable conference-room coverage.	
6	Diagonal Field-of-View	Diagonal field of view: At least 71° at the widest position. Horizontal, vertical and tele-end FOV shall be declared by the bidder.	
7	Horizontal Rotation	Horizontal pan range: At least ±170° (340° total), or wider.	
8	Vertical Rotation	Vertical tilt range: At least -30° to +90°, or wider.	
9	Number of presets	Preset positions: At least 2 user-configurable camera presets, recallable through the supplied remote, controller or software. The total number of supported presets shall be declared; higher OEM-standard capacity is acceptable.	
10	Video S/N	≥50dB	
11	Video Signal	Video signal: 1920 × 1080 at 60/50/30/25 fps and 1280 × 720 at 60/50/30/25 fps, or higher/equivalent supported modes.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
12	Video Encoding Format	Video encoding/output: Through USB/UVC, the camera shall support Full HD at the stipulated frame rates using MJPEG and/or H.264/H.265. YUY2 or an equivalent uncompressed output shall be supported at applicable resolutions.	
13	Control Interface	Control interface: At least one industry-standard camera-control interface using RS-232, RS-485 and/or IP over RJ45 shall be provided. USB/UVC control is also acceptable where supported. Required protocol documentation and cables/adapters shall be supplied.	
14	Video Output	Video output: At least one digital video output through USB 3.0/UVC or HDMI shall be provided. RJ45/IP video output shall be required where IP streaming is offered. All required cables/adapters shall be supplied.	
15	Video Streams	Video streams: Where IP streaming is offered, at least one configurable IP video stream shall be supported. Dual main/sub streams may be offered as per OEM design and are not mandatory.	
16	Stream Resolution	Stream resolution: For IP streaming, the primary stream shall support at least 1920 × 1080. The supported secondary-stream resolution, if any, shall be as per OEM design and declared by the bidder.	
17	LAN	LAN/PoE: At least 1 × RJ45 Ethernet port. IEEE 802.3af PoE or IEEE 802.3at PoE+ shall be acceptable. Any required injector or power supply shall be included.	
18	Operation Systems	Windows/Android/Mac OS/Linux	
19	Input Voltage	DC 12V	
20	Current Consumption	Power/current: The bidder shall declare the OEM-rated input voltage, maximum current and maximum power consumption. A fixed 2 A limit is not mandatory; maximum power consumption shall not exceed 24 W, and all required power accessories shall be supplied.	
21	Power Consumption	24W (Max)	
22	Operating Temperature	0° to 40° degrees Celsius	
23	Storage Temperature	-20° to 60° degrees Celsius	
24	Certifications	BIS Certifications Required	
25	Warranty	Three years warranty	

Item No. 6 – Full HD Video Conferencing Camera with 20x Optical Zoom

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Sensor	1/2.8", CMOS, Effective Pixel: 2 MP or higher	
2	Optical Zoom	20x or higher	
3	AI-Tracking Modes	Presenter Tracking, Auto Framing	
4	Horizontal Field-of-View	50 degrees(W) ~ 3 degrees(T) or better	
5	Vertical Field-of-View	30 degrees(W) ~ 2 degrees(T) or better	
6	Diagonal Field-of-View	Diagonal field of view: At least 60° at the widest position. The tele-end diagonal FOV shall be declared by the bidder; a narrower tele-end FOV is acceptable.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
7	Horizontal Rotation	Horizontal pan range: At least ±170° (340° total), or wider.	
8	Vertical Rotation	Vertical tilt range: At least -30° to +90°, or wider.	
9	Number of presets	User can set up to 255 presets (10 presets on IR remote)	
10	Video S/N	≥50dB	
11	Video Signals	1080p@60/50/30/25fps, 720p@60/50/30/25fps	
12	Video Encoding Format	Video encoding/output: Through USB/UVC, the camera shall support Full HD at the stipulated frame rates using MJPEG and/or H.264/H.265. YUY2 or an equivalent uncompressed output shall be supported at applicable resolutions.	
13	Control Interface	Control interface: At least one industry-standard camera-control interface using RS-232, RS-485 and/or IP over RJ45 shall be provided. USB/UVC control is also acceptable where supported. Required protocol documentation and cables/adapters shall be supplied.	
14	Video Output	USB 3.0, HDMI	
15	Operating Systems	Windows/Android/Mac OS/Linux	
16	Input Voltage	DC 12V	
17	Current Consumption	2A (Max)	
18	Power Consumption	24W (Max)	
19	Operating Temperature	0° to 40° degrees Celsius	
20	Storage Temperature	-20° to 60° degrees Celsius	
21	Certifications	BIS Certifications	
22	Warranty	Three years warranty	

Item No. 7 – Wireless Speakerphone with 4 Array Mic

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Parameter	Specifications	
2	Number of MIC	Should have inbuilt 4 microphone connected in array	
3	Sensitivity	Microphone sensitivity shall be declared with the applicable test conditions; no fixed -26 dBFS value is mandatory. The offered device shall provide clear 360° speech pickup over the stipulated coverage range.	
4	Microphone Frequency response	100Hz – 7.5kHz or better	
5	DSP functionality	Should Have AI Noise algorithm with Acoustic Echo Cancellation (AEC), Automatic Gain Control (AGC), Automatic Noise Cancellation (ANC)	
6	Speakers Frequency response	120Hz - 18kHz or better	
7	Speaker Power	Minimum 5 Watt or better	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
8	Connectivity	Connectivity: USB 2.0 or higher and Bluetooth 5.0 or later. USB Type-A, Type-B or Type-C shall be acceptable, with the required cable/adaptor supplied. RS-232 and RS-485 are not required for this speakerphone.	
9	Control buttons	Power, Volume +/-, Mute, Bluetooth & Call Answer/Hangup or more	
10	Control Interface	Clause revised: Connectivity interface shall be USB 2.0 or higher for audio/data. RS-232 and RS-485 are not required for this speakerphone. The required USB cable/adaptor shall be supplied.	
11	Video Output	The Video Output clause is deleted for this item.	
12	Operating Systems	Windows/Android/Mac OS/Linux	
13	Input Voltage	DC 12V	
14	Current Consumption	2A (Max)	
15	Power Consumption	24W (Max)	
16	Operating Temperature	0° to 40° degrees Celsius	
17	Storage Temperature	Storage temperature: The supported range shall cover at least 0°C to +50°C; a wider OEM-specified range is acceptable.	
18	Warranty	Three years warranty	

Item No. 8 – Wireless Speakerphone with 8 Array Mic

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Number of MIC	Should have inbuilt 8 microphone connected in array	
2	Sensitivity	Microphone sensitivity shall be declared with the applicable test conditions; no fixed -26 dBFS value is mandatory. The offered device shall provide clear 360° speech pickup over the stipulated coverage range.	
3	Frequency response	Microphone frequency response shall cover at least 100 Hz to 16 kHz; an equal or wider OEM-specified range is acceptable.	
4	DSP functionality	Should Have AI Noise algorithm with Acoustic Echo Cancellation (AEC), Voice Activity Detection (VAD), Automatic Noise Cancellation (ANC)	
5	Number of Speakers	Integrated speaker system: One or more built-in speakers using an OEM-designed configuration, capable of full-duplex conferencing and meeting the stipulated frequency/output performance. The configuration shall be declared.	
6	Frequency response	Music: 120Hz - 20kHz & Voice: 200Hz- 20kHz or better	
7	Speakers	The fixed speaker-driver size/configuration requirement is deleted. The bidder shall declare the offered speaker design and demonstrate compliance with the revised frequency and output requirements.	
8	Speaker Power	Speaker output: Total rated speaker power shall be at least 5 W, or the offered unit shall demonstrate equivalent sound-pressure output suitable for the intended room. Rated power and test conditions shall be declared.	
9	Connectivity	Connectivity: USB 2.0 or higher wired connection and Bluetooth 5.0 or later. USB Type-A, Type-B or Type-C is acceptable. A wireless USB dongle shall be supplied only where required for the offered wireless connection; all necessary cables/adapters shall be included.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
10	Wireless Cascade	Cascade/expansion capability: The system shall support connection of up to two compatible units in total through wireless or an OEM-standard wired/digital link, with the connected units operating as one audio system. Required accessories shall be supplied.	
11	Control buttons	Controls shall include power, volume up/down, microphone mute and Bluetooth/call control, or equivalent functions. Cascade/expansion may be controlled automatically or through hardware/software and need not have a dedicated button.	
12	System Compatibility	Windows, MacOS, Android & Chrome OS	
13	Battery Type	Li-ion or better Rechargeable battery	
14	Backup Time	8 Hours or better	
15	Charging Time	5 Hours or Less	
16	Warranty	Three years warranty	

Item No. 9 – Wireless Speakerphone with 4 expansion external microphone

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Speakerphone		
2	Speaker Output	Speaker system should include 2 speakers of 10 watt each housed in single unit	
3	Controls	Should have touch button to control the device	
4	Function Control	Power ON/OFF (Battery status), Volume+, Volume-, Speaker mute, Microphone mute, Scene switch, Language switch etc.	
5	Status Indication	Should have LED Light Indication	
6	Connectivity	Should have USB wired and wireless USB dongle connectivity	
7	Inbuilt Battery	Should have inbuilt battery with minimum 2 hours battery backup	
8	Power Supply	DC 12 Volts, 2 Amp.	
9	Expansion Microphone		
10	Wireless Microphone	Solution should supply with minimum 4 Wireless expansion microphones	
11	Microphone type	Digital Silicon Omnidirectional Microphone	
12	Sensitivity	-26dBm	
13	Frequency Response	100Hz - 16kHz	
14	Signal to Notice Ratio	60dB or better	
15	Sampling Rate	48 kHz or better	
16	Voice Pick up Range	3 Meters or more	
17	Wireless Transmission	Should connect with 2.4 Ghz wireless transmission	
18	Controls	Should have touch button to control the device	
19	Function Control	Power ON/OFF, Microphone mute	
20	Status Indication	Should have LED Light Indication for charging, Mute and working status	
21	Inbuilt Battery	Should have inbuilt battery with minimum 6 hours battery backup	
22	Charging	Charging mode USB type C & Charging tray	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
23	Charging Tray		
24	Charging Tray	System should be supplied with minimum 2 no's of charging tray.	
25	Charging Capacity	Charging tray should have charging capacity of up to 2 Microphone	
26	Charging Interface	USB type C	
27	Power Supply	DC 5 Volts, 2 Amp.	
28	Operational Requirements		
29	Echo Cancellation	Solution should support echo cancellation up to 256ms or more	
30	Noise Cancellation	Solution should support noise cancellation	
31	Warranty	Three years warranty	

Item No. 10 – All in One Video Bar

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Camera		
2	Pixels	8 MP or higher	
4	Field of View	Field of view: Diagonal FOV at least 120° and horizontal FOV at least 110° at the widest position. Vertical FOV shall be declared by the bidder.	
5	All-in-one design	Compact unit combining camera, microphone, and speaker in one device	
6	Cross-Platform Compatibility	Seamless integration with any major VC platform	
7	Auto Tracking AI Modes	Single person tracking, speaker tracking, participant tracking, close-up of speaker	
8	Digital Noise Reduction	Digital noise reduction: 2D and/or 3D digital noise reduction, or equivalent OEM image-enhancement/noise-reduction technology, shall be supported.	
9	Backlight compensation	Backlight compensation, automatic exposure/WDR, or an equivalent OEM image-processing function for backlit scenes shall be supported.	
10	SNR	Video SNR: At least 50 dB, or an equivalent OEM image-quality specification supported by the product datasheet or a test report, shall be accepted.	
11	Pan / Tilt / Zoom		
12	Digital Zoom	5x or more	
13	Pan/Tilt	The query is treated against Pan/Tilt (Sr. No. 13), not SNR. Revised clause: Electronic PTZ or mechanical-plus-electronic PTZ shall support participant framing across the stated FOV; the effective pan/tilt range shall be declared. No fixed ±10° range is mandatory.	
14	Speaker	AI capabilities: Auto/group framing and speaker/presenter or subject tracking shall be supported. Equivalent OEM terminology, automatic view switching and functionally equivalent tracking modes shall be accepted.	
15	Speaker Power	Speaker output: Total rated speaker power shall be at least 5 W and shall be suitable for the intended conferencing room. The bidder shall declare rated power and OEM sound-pressure/test data.	
16	Microphone		
17	Microphone Type	Beamforming array	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
18	No. of Microphones	Microphone array: An OEM-designed beamforming array with at least 4 built-in microphone elements, providing full-duplex pickup over the stipulated range. The element count shall be declared but shall not be the sole compliance criterion.	
19	Audio processing	AEC (acoustic echo cancellation), automatic noise reduction, automatic gain	
20	Pick-up range	Microphone pickup range: At least 6 metres under OEM-declared test conditions. The solution shall be capable of extending coverage up to 8 metres through a compatible expansion microphone where required; any required accessory shall be quoted/supplied as specified.	
21	Connectivity and other specifications		
22	HD Interface	Interfaces: (i) at least 1 × HDMI output supporting the required video format; (ii) at least 1 × USB 3.0 or higher UVC/UAC interface, with Type-A, Type-B or Type-C accepted and required cable supplied; a separate USB 2.0 port is not mandatory; and (iii) network connectivity through RJ45 and/or Wi-Fi where required by the offered IP/cloud architecture.	
23	USB Interface	1 x USB 3.0, 1 x USB2.0 or more	
24	Network Interface	Network interface: RJ45 Ethernet is not mandatory for basic USB operation. Where the offered solution uses IP streaming, cloud management or remote device management, network connectivity through RJ45 and/or Wi-Fi shall be provided with required licences/accessories.	
25	Remote	Remote/control: IR, RF/2.4 GHz or Bluetooth remote control, or supplied software control, shall be acceptable. At least 2 user-configurable camera presets shall be supported; AI auto-framing may be provided additionally.	
26	Power Supply	DC 12V	
27	Power Consumption	20W (Max)	
28	Compatible Operating System	Windows 10 or higher, Mac OS 10.10 or higher	
29	Accessories	Remote Control, Power Adaptor, User Manual, desktop stand	
30	Mounting Options	Wall-mountable and desktop stand;	
31	Others	BIS Certifications required	
32	Centralized cloud management	Centralized cloud management may be offered as an optional feature and shall not be mandatory for technical compliance. Any licences/subscriptions, hosting location, security controls and data-residency commitments shall be clearly declared by the bidder.	
33	Warranty	Three years warranty	

Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	LCD Panel Parameter:		
2	LCD Screen Size:	55 inches diagonal or higher	
3	Panel Type:	TFT-LCD	
4	Brightness	500cd/m2 or more	
5	Aspect Ratio:	16:9	
6	Resolution:	3840 x 2160 4K or better	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
7	Contrast Ratio:	Contrast ratio: 4000:1 or better (native/static panel contrast).	
8	Display colour	16.7 M	
9	Visual angle	178 H / 178 V	
10	Response time	Response time (display): 8 ms or better.	
11	Duty Cycle	16 x 7 working	
12	Touch Panel	Touch functionality may be integrated or provided through an OEM/OEM-authorized compatible overlay supplied, fitted and warranted as part of the complete kiosk. The complete touch solution shall meet: infrared touch; positioning accuracy of ±2 mm or better; transmittance of 92% or higher; surface hardness of 7H or better; touch response of 6 ms or better; at least 10 simultaneous touch points; and finger-touch operation.	
13	Touch type	Infrared Touch	
14	Positioning accuracy	±2mm or better	
15	Transmittance	≥92% or better	
16	Hardness	7H or better	
17	Response time	6 ms or better	
18	No. of Touch Points	10 touch points or more	
19	Touch Media	Finger touch	
20	Power & Environment		
21	Power supply	AC 100~240V 50/60Hz	
22	Power consumption	≤ 120W or less	
23	Operation temperature	Operating temperature: 0°C to 40°C or wider.	
24	Operation humidity	20% to 80%	
25	Hardware		
26	Material	Aluminium Alloy (Frame)	
27	Protective Glass	AR Laminated and Tempered glass	
28	Processor		
29	Memory	2 GB or Better	
30	Storage	16 GB or Better	
31	Operating System	Operating system: Android 11 or later, Tizen, webOS, or any equivalent OEM commercial-signage operating system, provided the offered solution supports all specified signage/CMS functions, interfaces, security updates and remote-management requirements. All required licences/subscriptions for the warranty period shall be included and disclosed.	
32	Interface		
33	Input/Output Port	1x HDMI, 1x USB, 1x RJ45, Audio	
34	Speaker	2 x 10 Watt Each or better	
35	Network	LAN & Wifi or more	
36	Certification	BIS Certification required	
37	Additional Functions	Signage Software function	
38	Digital Signage Software Features	1. Content Creator • Full transparency and layering. • Enables you to create your presentation using a simple drag and drop	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
		type process. • Unlimited free-style zones. • User Friendly GUI to create designs and content • Features extensive file format support and delivers smooth playback. • Advance tickers and live news feed Doc, Img, video supportive 2. Content Manager • Smart Data Transfer updates only the changes in existing content. • Grouping support for players. • FTP and direct transfer. • Secure encrypted content transfer. • Resume Capability of Data transfer- Eliminates the need to transfer files from scratch after network breakdown. • One-click Emergency Alerts. • take screenshots and check player health from the central server. • Created content for multiple devices. 3. Content Player • Multiple format content playback. • Minimized hardware requirements. • Allows to log report of presentation, playback and player health. • Retrieves its last working state in case of power failure. • Playbacks for presentations for touch screen kiosks and non-interactive screens. • Output in scalable resolutions (horizontal or vertical). • OEM Logo & credentials should be published on website.	
39	Other features	Anti-vandalism (Lock & Key)	
40	Warranty	Three years warranty	

Item No. 12 – Interactive Touch Screen Kiosk (21.5 Inch)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Type/Mounting	Pedestal	
2	Construction base	The enclosure shall be of minimum 1.6 mm thick CRCA Steel, polymer powder coated designed to work in harsh conditions. The design shall be vandal resistant. Design must be sleek and attractive.	
3	Display Type:	Display with anti-glare toughened glass	
4	Display Size	21.5 inch or higher	
5	Panel Type	Panel type: IPS, ADS, PLS or equivalent wide-view TFT-LCD/LED technology meeting all other specified display parameters, including the required viewing angles.	
6	Active area(mm)	476.064(H) x 267.786(V) or better	
7	Resolution	1920 x 1080 Full HD or better	
8	Light Source	LED	
9	Brightness	250 cd/m² or higher	
10	Contrast Ratio	Contrast ratio: 1000:1 or higher (native/static panel contrast).	
11	Colours	16.7M or better	
12	Aspect Ratio	16:09	
13	Response Time (Typical GTG)	8ms or better	
14	Operational Hours	30000 Hours or higher	
15	Viewing Angles	178º horizontal, 178º vertical	
16	Curvature	Flat	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
17	Colour Gamut	72% or better	
18	Interactive Method	IR / Capacitive	
19	Touch Type	Pressure-sensitive, cordless, battery-free	
20	Touch Accuracy	±0.5mm(center); ±1mm(edge)	
21	Touch Response	First touch:30ms; Continuous touch:5ms	
22	Touch Screen	Multi-touch Points	
23	Control Buttons	Power, Menu, +/-, Auto or more	
24	Connectivity (Minimum)	Display connectivity (minimum): 1 × USB and 1 × HDMI. DisplayPort or another additional digital display interface may be offered but shall not be mandatory. All cables/adapters required for the offered configuration shall be supplied.	
25	Pen Type	Pen / stylus	
26	Power Supply	Power supply: The complete kiosk shall accept 100–240 V AC, 50/60 Hz. The display may operate on 12 V DC through a supplied certified AC-to-DC adapter/internal SMPS, or may accept AC input directly. All power accessories shall be included.	
27	System Details:		
28	CPU	Intel Core i5 (10 th Gen or better processor)	
29	RAM	8 GB RAM	
30	Storage	256 GB SSD or better	
31	In-Built Wi-Fi / Wireless LAN Card	Should have an inbuilt Wi-Fi / Wireless LAN Card	
32	Ports (Minimum)	HDMI/DP x 2, USB ports x 4, LAN Port x 1, Audio	
33	Operating System	Windows 11 or better	
34	Certification	Valid BIS registration of the Mini PC to be submitted with technical bid. BIS should be registered in the name of kiosk manufacturer.	
35	Warranty	Three years warranty	

Item No. 13 – Interactive Touch Screen Kiosk (32 Inch)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	LCD Panel Parameter:		
2	LCD Screen Size:	32 inches diagonal or higher	
3	Panel Type:	TFT/LCD with LED backlit	
4	Brightness	300 cd/m2 or more	
5	Aspect Ratio:	16:9	
6	Resolution:	1920 x 1080 or more	
7	Contrast Ratio:	Contrast ratio: 4000:1 or better (native/static panel contrast).	
8	Display colour	16.7 M	
9	Visual angle	178 H / 178 V	
10	Response time	Response time (display): 8 ms or better.	
11	Duty Cycle	16 x 7 working	
12	Power & Environment		

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
13	Power supply	AC 100~240V 50/60Hz	
14	Power consumption	≤ 60W or less	
15	Operation temperature	Operating temperature: 0°C to 40°C or wider.	
16	Operation humidity	20% to 80%	
17	Working temperature	0℃ - 45℃	
18	Internal Computing System		
19	Processor	Processor: Quad-core or better processor/SoC suitable for the offered operating system and capable of running all specified signage functions. ARM Cortex architecture and a fixed clock speed shall not be mandatory for an OEM purpose-built signage platform. Compliance shall be supported by the OEM datasheet/undertaking.	
20	Memory	Memory: 2 GB RAM or higher. The offered configuration shall support simultaneous operation of all specified signage, scheduling, monitoring and content-management functions.	
21	Storage	Internal storage: 8 GB or higher. The bidder shall ensure adequate usable capacity for the operating system, applications and locally cached content required for all specified functions.	
22	Operating System	Operating system: Android 12 or later, Tizen, webOS, or any equivalent OEM commercial-signage operating system, provided all specified signage/CMS, scheduling, device-management, security-update and interface requirements are met. All required licences/subscriptions for the warranty period shall be included and disclosed.	
23	Video format Supported	H.265, H.264, VC-1, MPEG-1/2/4, VP8	
24	Picture format Supported	JPG, JPEG, BMP, PNG, GIF	
25	Speaker	2 x 10 Watt Each or better	
26	Network	LAN & Wifi or more	
27	USB port	2x USB or more	
28	Additional Functions	Signage Software function	
29		Should be designed as an integrated content control system where display handling, layout configuration, and content flow operate together as a single unified process	
30		Should allow centralized control of multiple screens with each device uniquely identified and manageable from the admin interface, including the ability to remotely deactivate or detach any device when required.	
31		Should support pre-built screen templates with automatic adjustment of content based on orientation and layout selection, while also providing a preview option to verify how the final output will appear before publishing	
32		Content handling shall be seamless, allowing users to upload, organize, add, and remove media such as images, videos, and documents, and combine them into playlists that can be assigned and controlled across devices.	
33		Playback shall be governed through an integrated scheduling mechanism where content, playlists, and display behavior can be time-controlled and automated without manual intervention.	
34		on-screen elements such as scrolling text or information bars shall be optionally enabled, with customization in appearance and behavior, or replaced with live information feeds when required.	
35		A real-time clock display should also be supported within these elements.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
36		User access should follow a structured hierarchy where higher-level users can create and manage other users and administrators, with secure verification during account creation	
37		the system should function as a centralized yet flexible solution where device control, content management, scheduling, and user access are interconnected, ensuring smooth and controlled digital display operations.	
38	Warranty	Three years warranty	

Item No 14: Vertical Digital Signage Kiosk (43 Inch)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	LCD Panel Parameter:		
2	LCD Screen Size:	43 inches diagonal or higher	
3	Panel Type:	TFT/LCD with LED backlit	
4	Brightness	300 cd/m2 or more	
5	Aspect Ratio:	16:9	
6	Resolution:	1920 x 1080 or more	
7	Contrast Ratio:	Native/static contrast ratio: 1200:1 or better for IPS/ADS/equivalent wide-view panels, or 4000:1 or better for VA/equivalent high-contrast panels. All other brightness, resolution and viewing-angle requirements shall remain unchanged.	
8	Display colour	16.7 M	
9	Visual angle	178 H / 178 V	
10	Response time	Response time (display): 8 ms or better.	
11	Duty Cycle	16 x 7 working	
12	Power & Environment		
13	Power supply	AC 100~240V 50/60Hz	
14	Power consumption	Power consumption: typical operating consumption shall not exceed 90 W and maximum/rated consumption shall not exceed 120 W for the complete display and embedded computing configuration. The bidder shall declare both typical and maximum OEM-rated values.	
15	Operation temperature	Operating temperature: 0°C to 40°C or wider.	
16	Operation humidity	20% to 80%	
17	Working temperature	0℃ - 45℃	
18	Internal Computing System		
19	Processor	Processor: Quad-core or better processor/SoC suitable for the offered operating system and capable of running all specified signage functions. ARM Cortex architecture and a fixed clock speed shall not be mandatory for an OEM purpose-built signage platform. Compliance shall be supported by the OEM datasheet/undertaking.	
20	Memory	Memory: 2 GB RAM or higher. The offered configuration shall support simultaneous operation of all specified signage, scheduling, monitoring and content-management functions.	
21	Storage	Internal storage: 16 GB or higher. The bidder shall ensure adequate usable capacity for the operating system, applications and locally cached content required for all specified functions.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
22	Operating System	Operating system: Android 12 or later, Tizen, webOS, or any equivalent OEM commercial-signage operating system, provided all specified signage/CMS, scheduling, device-management, security-update and interface requirements are met. All required licences/subscriptions for the warranty period shall be included and disclosed.	
23	Video format Supported	H.265, H.264, VC-1, MPEG-1/2/4, VP8	
24	Picture format Supported	JPG, JPEG, BMP, PNG, GIF	
25	Speaker	2 x 10 Watt Each or better	
26	Network	LAN & Wifi or more	
27	USB port	2x USB or more	
28	Additional Functions	Signage Software function	
29	Digital Signage Software Features	Should be designed as an integrated content control system where display handling, layout configuration, and content flow operate together as a single unified process	
30		Should allow centralized control of multiple screens with each device uniquely identified and manageable from the admin interface, including the ability to remotely deactivate or detach any device when required.	
31		Should support pre-built screen templates with automatic adjustment of content based on orientation and layout selection, while also providing a preview option to verify how the final output will appear before publishing	
32		Content handling shall be seamless, allowing users to upload, organize, add, and remove media such as images, videos, and documents, and combine them into playlists that can be assigned and controlled across devices.	
33		Playback shall be governed through an integrated scheduling mechanism where content, playlists, and display behavior can be time-controlled and automated without manual intervention.	
34		on-screen elements such as scrolling text or information bars shall be optionally enabled, with customization in appearance and behavior, or replaced with live information feeds when required.	
35		A real-time clock display should also be supported within these elements.	
36		User access should follow a structured hierarchy where higher-level users can create and manage other users and administrators, with secure verification during account creation	
37		the system should function as a centralized yet flexible solution where device control, content management, scheduling, and user access are interconnected, ensuring smooth and controlled digital display operations.	
38	Warranty	Three years warranty	

Item No. 15 – OPS Module (Core i5 Class)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Type Detachable	PC module	
2	CPU Intel Core	CPU: Intel Core i5, 12th Generation or later, or equivalent current-generation processor meeting or exceeding the offered processor's performance.	
3	RAM	8 GB or better	
4	SSD	256 GB SSD or better	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
5	Operating system	Windows10	
6	I/O Ports	HDMI x 1, USB ports x 4, LAN Port x 1	
7	Max Power	50W or less	
8	Certifications	Certification: The offered model shall hold valid BIS registration wherever applicable. Manufacturing may be through the OEM's own facility or an authorized contract-manufacturing facility covered by the applicable BIS registration/authorization. The product catalogue shall be available on the OEM website.	

Item No. 16 – OPS Module (Core i7 Class)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Type Detachable	PC module	
2	CPU Intel Core	I7 10th Generation or better	
3	RAM	8 GB or better	
4	SSD	256 GB SSD or better	
5	Operating system	Windows10	
6	I/O Ports	HDMI x 1, USB ports x 4, LAN Port x 1	
7	Max Power	50W or less	
8	Certifications	Certification: The offered model shall hold valid BIS registration wherever applicable. Manufacturing may be through the OEM's own facility or an authorized contract-manufacturing facility covered by the applicable BIS registration/authorization. The product catalogue shall be available on the OEM website.	
9	Warranty	Three years warranty	

Item No. 17 – Micro Computer (Intel Core i5 Class or Equivalent)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Processor	Processor: Intel Core i5, 12th Generation or later, or equivalent processor of comparable or better performance.	
2	Small Form Factor	Small form factor: Computer volume shall be 2 litres or less. No change in the published requirement.	
3	In-Built Wi-Fi /Wireless LAN Card	Should have an inbuilt Wi-Fi / Wireless LAN Card	
4	RAM	8 GB or better	
5	SSD	256 GB SSD or better	
6	Ports (Min.)	HDMI x 1, USB ports x 4, LAN Port x 1	
7	Keyboard & Mouse	Wireless	
8	Operating System	Operating system: Genuine Windows 11 Professional, factory preloaded, with applicable licence and recovery media/partition.	
9	Certifications	BIS certification required	
10	Warranty	Three years warranty	

Item No. 18 – Micro Computer (Intel Core i7 Class or Equivalent)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Processor	Processor: Intel Core i7, 12th Generation or later, or equivalent processor of comparable or better performance.	
2	Small Form Factor	Small form factor: Computer volume shall be 2 litres or less. No change in the published requirement.	
3	In-Built Wi-Fi /Wireless LAN Card	Should have an inbuilt Wi-Fi / Wireless LAN Card	
4	RAM	8 GB or better	
5	SSD	256 GB SSD or better	
6	Ports (Min.)	HDMI x 1, USB ports x 4, LAN Port x 1	
7	Keyboard & Mouse	Wireless	
8	Operating System	Operating system: Genuine Windows 11 Professional, factory preloaded, with applicable licence and recovery media/partition.	
9	Certifications	BIS certification required	
10	Warranty	Three years warranty	

Item No. 19 – Movable Stand for Mounting Digital Display

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
Movable Stand for Mounting Digital Display		Type: Floor-mounted movable display stand with lockable castor wheels Display Compatibility: Suitable for flat panel digital displays of sizes 55”, 65”, 75”, 86” and 98” Load Capacity: Minimum 150 kg maximum supported load VESA Mount Support: Compatible with standard VESA mounting patterns suitable for supported display sizes Construction: Heavy-duty metal construction (steel or equivalent) for stability and durability Mobility: Smooth-rolling wheels with at least two lockable wheels for secure positioning Accessories: Integrated base shelf and accessory shelf/rack for placement of media players, conferencing equipment, or peripherals Finish: Industrial powder-coated finish or equivalent for corrosion resistance	
Warranty		Three years warranty	

Item No. 20 – Interactive Screen with Diagonal 65 inch

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Diagonal Size	65" or higher	
2	Resolution	4K UHD or higher	
3	Brightness (typical)	Brightness: 350 nits or higher. No change; a display offering 400 nits shall be compliant.	
4	Contrast ratio (typical)	Contrast ratio: 1100:1 or higher (native/static). No change; any higher offered value shall be acceptable.	
5	CPU	Processor: Octa-core or better processor/SoC capable of smooth 4K display, touch, whiteboard, casting and multitasking operation. Reference to RK3576 shall not be mandatory. Compliance shall be supported by the OEM datasheet/undertaking.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
6	Memory (RAM)	8GB or higher	
7	Storage (ROM)	128 GB or higher	
8	OS	Android 16.0 or better	
9	Panel life	50,000 hrs or higher	
10	Touch Glass	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable. Touch response time shall be 8 ms or better.	
11	Touch points	40 or higher	
12	Touch response time	Touch response time: 8 ms or better.	
13	Connectivity - Minimum Ports	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.	
14	Additional Features	Smart Eye Protection, Anti-glare coating	
15	Speakers	20 Watt x 2 speakers or better	
16	Wi-fi	Wireless: Dual-band Wi-Fi 5 or better. Wi-Fi 6/6E or later shall be accepted as higher compliance.	
17	Bluetooth	Bluetooth: Version 5.2 or higher. An offered version 5.3 or later shall be compliant.	
18	Whiteboard Interactive Software (Android) Features	· Multi-touch writing (multiple users simultaneously) · Pen, marker, highlighter tools · Adjustable pen thickness and colors · Eraser (finger, pen-end, or tool-based) · Lasso/select tool to move or resize content · Geometrical Tools	
19	Wireless screen sharing	Share/mirror the content of an external device wirelessly on the interactive panel	
20	Power Supply	AC 100-240V 50/60Hz	
21	Max. Power Consumption	Maximum power consumption: 350 W or lower. The bidder shall declare the OEM-rated maximum value; lower consumption shall be treated as better compliance.	
22	Operating temperature	0°C ~ 40°C or Better	
23	Operating Humidity	10% ~ 80% RH Non-Condensing or Better	
24	Accessories	Wall mount Kit, Remote, 2 x Stylus, 1x HDMI Cable (1.5 Meter), 1x USB A to B cable (1.5 Meter), 1x Power Cable (1.5 Meter)	
25	Magnetic pen holder	Magnetic pen holder for two pens	
26	Certifications	BIS Certifications Required	
27	Warranty	Three years warranty	

Item No.21 – Interactive Screen with Diagonal 75 inch

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Diagonal Size	75" or higher	
2	Resolution	4K UHD or higher	
3	Brightness (typical)	Brightness: 350 nits or higher. No change; a display offering 400 nits shall be compliant.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
4	Contrast ratio (typical)	Contrast ratio: 1100:1 or higher (native/static). No change; any higher offered value shall be acceptable.	
5	CPU	Processor: Octa-core or better processor/SoC capable of smooth 4K display, touch, whiteboard, casting and multitasking operation. Reference to RK3576 shall not be mandatory. Compliance shall be supported by the OEM datasheet/undertaking.	
6	Memory (RAM)	8GB or higher	
7	Storage (ROM)	128 GB or higher	
8	OS	Android 16.0 or better	
9	Panel life	50,000 hrs or higher	
10	Touch Glass	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable. Touch response time shall be 8 ms or better.	
11	Touch points	40 or higher	
12	Touch response time	Touch response time: 8 ms or better.	
13	Connectivity - Minimum Ports	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.	
14	Additional Features	Smart Eye Protection, Anti-glare coating	
15	Speakers	20 Watt x 2 speakers or better	
16	Wi-fi	Wireless: Dual-band Wi-Fi 5 or better. Wi-Fi 6/6E or later shall be accepted as higher compliance.	
17	Bluetooth	Bluetooth: Version 5.2 or higher. An offered version 5.3 or later shall be compliant.	
18	Whiteboard Interactive Software (Android) Features	· Multi-touch writing (multiple users simultaneously) · Pen, marker, highlighter tools · Adjustable pen thickness and colors · Eraser (finger, pen-end, or tool-based) · Lasso/select tool to move or resize content · Geometrical Tools	
19	Wireless screen sharing	Share/mirror the content of an external device wirelessly on the interactive panel	
20	Power Supply	AC 100-240V 50/60Hz	
21	Max. Power Consumption	Maximum power consumption: 350 W or lower. The bidder shall declare the OEM-rated maximum value; lower consumption shall be treated as better compliance.	
22	Operating temperature	0°C ~ 40°C or Better	
23	Operating Humidity	10% ~ 80% RH Non-Condensing or Better	
24	Accessories	Wall mount Kit, Remote, 2 x Stylus, 1x HDMI Cable (1.5 Meter), 1x USB A to B cable (1.5 Meter), 1x Power Cable (1.5 Meter)	
25	Magnetic pen holder	Magnetic pen holder for two pens	
26	Certifications	BIS Certifications Required	
27	Warranty	Three years warranty	

Item No. 22 – Interactive Screen with Diagonal 86 inch

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Diagonal Size	86" or higher	
2	Resolution	4K UHD or higher	
3	Brightness (typical)	Brightness: 400 nits or higher (typical).	
4	Contrast ratio (typical)	Contrast ratio: 1100:1 or higher (native/static). No change; any higher offered value shall be acceptable.	
5	CPU	Processor: Octa-core or better processor/SoC capable of smooth 4K display, touch, whiteboard, casting and multitasking operation. Reference to RK3576 shall not be mandatory. Compliance shall be supported by the OEM datasheet/undertaking.	
6	Memory (RAM)	8GB or higher	
7	Storage (ROM)	128 GB or higher	
8	OS	Android 16.0 or better	
9	Panel life	50,000 hrs or higher	
10	Touch Glass	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable. Touch response time shall be 8 ms or better.	
11	Touch points	40 or higher	
12	Touch response time	Touch response time: 8 ms or better.	
13	Connectivity - Minimum Ports	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.	
14	Additional Features	Smart Eye Protection, Anti-glare coating	
15	Speakers	20 Watt x 2 speakers or better	
16	Wi-fi	Wireless: Dual-band Wi-Fi 5 or better. Wi-Fi 6/6E or later shall be accepted as higher compliance.	
17	Bluetooth	Bluetooth: Version 5.2 or higher. An offered version 5.3 or later shall be compliant.	
18	Whiteboard Interactive Software (Android) Features	· Multi-touch writing (multiple users simultaneously) · Pen, marker, highlighter tools · Adjustable pen thickness and colors · Eraser (finger, pen-end, or tool-based) · Lasso/select tool to move or resize content · Geometrical Tools	
19	Wireless screen sharing	Share/mirror the content of an external device wirelessly on the interactive panel	
20	Power Supply	AC 100-240V 50/60Hz	
21	Max. Power Consumption	Maximum power consumption: 350 W or lower. The bidder shall declare the OEM-rated maximum value; lower consumption shall be treated as better compliance.	
22	Operating temperature	0°C ~ 40°C or Better	
23	Operating Humidity	10% ~ 80% RH Non-Condensing or Better	
24	Accessories	Wall mount Kit, Remote, 2 x Stylus, 1x HDMI Cable (1.5 Meter), 1x USB A to B cable (1.5 Meter), 1x Power Cable (1.5 Meter)	
25	Magnetic pen holder	Magnetic pen holder for two pens	
26	Certifications	BIS Certifications Required	
27	Warranty	Three years warranty	

Item No. 23 – Interactive Screen with Diagonal 98 inch

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Diagonal Size	98" or higher	
2	Resolution	4K UHD or higher	
3	Brightness (typical)	Brightness: 400 nits or higher (typical).	
4	Contrast ratio (typical)	1100:1 or higher	
5	CPU	Processor: Quad-core or better OEM processor/SoC capable of smooth 4K display, touch, whiteboard, casting and multitasking operation. No specific processor model shall be mandatory; compliance shall be supported by the OEM datasheet/undertaking.	
6	Memory (RAM)	8GB or higher	
7	Storage (ROM)	Internal storage: 64 GB or higher.	
8	OS	Operating system: Android 13 or later, with OEM security updates and support during the warranty period.	
9	Panel life	50,000 hrs or higher	
10	Touch Glass	4 mm tempered glass or better	
11	Touch points	40 or higher	
12	Touch response time	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better. Touch response time: 8 ms or better.	
13	Connectivity - Minimum Ports	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.	
14	Additional Features	Smart Eye Protection, Anti-glare coating	
15	Speakers	Built-in audio: Minimum 15 W × 2 speakers. A higher-output built-in or supplied external audio system shall be acceptable.	
16	Wi-fi	Wi-fi 5 (2.4 and 5 GHz) or better	
17	Bluetooth	Bluetooth: Version 5.0 or higher.	
18	Whiteboard Interactive Software (Android) Features	· Multi-touch writing (multiple users simultaneously) · Pen, marker, highlighter tools · Adjustable pen thickness and colors · Eraser (finger, pen-end, or tool-based) · Lasso/select tool to move or resize content · Geometrical Tools	
19	Wireless screen sharing	Share/mirror the content of an external device wirelessly on the interactive panel	
20	Power Supply	AC 100-240V 50/60Hz	
21	Max. Power Consumption	Maximum power consumption for 98-inch/110-inch interactive displays: 650 W or lower. The OEM-rated maximum value shall be declared.	
22	Operating temperature	0°C ~ 40°C or Better	
23	Operating Humidity	10% ~ 80% RH Non-Condensing or Better	
24	Accessories	Wall mount Kit, Remote, 2 x Stylus, 1x HDMI Cable (1.5 Meter), 1x USB A to B cable (1.5 Meter), 1x Power Cable (1.5 Meter)	
25	Magnetic pen holder	Magnetic pen holder for two pens	
26	Certifications	BIS Certifications Required	
27	Warranty	Three years warranty	

Item No. 24 – Interactive Screen with Diagonal 110 inch

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Diagonal Size	110" or higher	
2	Resolution	4K UHD or higher	
3	Brightness (typical)	Brightness: 400 nits or higher (typical).	
4	Contrast ratio (typical)	1100:1 or higher	
5	CPU	Processor: Quad-core or better OEM processor/SoC capable of smooth 4K display, touch, whiteboard, casting and multitasking operation. No specific processor model shall be mandatory; compliance shall be supported by the OEM datasheet/undertaking.	
6	Memory (RAM)	8GB or higher	
7	Storage (ROM)	128 GB or higher	
8	OS	Android 16.0 or better	
9	Panel life	50,000 hrs or higher	
10	Touch Glass	4 mm tempered glass or better	
11	Touch points	40 or higher	
12	Touch response time	6 ms or better	
13	Connectivity - Minimum Ports	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.	
14	Additional Features	Smart Eye Protection, Anti-glare coating	
15	Speakers	20 Watt x 2 speakers or better	
16	Wi-fi	Wi-fi 5 (2.4 and 5 GHz) or better	
17	Bluetooth	Bluetooth version 5.2 or higher	
18	Whiteboard Interactive Software (Android) Features	· Multi-touch writing (multiple users simultaneously) · Pen, marker, highlighter tools · Adjustable pen thickness and colors · Eraser (finger, pen-end, or tool-based) · Lasso/select tool to move or resize content · Geometrical Tools	
19	Wireless screen sharing	Share/mirror the content of an external device wirelessly on the interactive panel	
20	Power Supply	AC 100-240V 50/60Hz	
21	Max. Power Consumption	Maximum power consumption for 98-inch/110-inch interactive displays: 650 W or lower. The OEM-rated maximum value shall be declared.	
22	Operating temperature	0°C ~ 40°C or Better	
23	Operating Humidity	10% ~ 80% RH Non-Condensing or Better	
24	Accessories	Wall mount Kit, Remote, 2 x Stylus, 1x HDMI Cable (1.5 Meter), 1x USB A to B cable (1.5 Meter), 1x Power Cable (1.5 Meter)	
25	Magnetic pen holder	Magnetic pen holder for two pens	
26	Certifications	BIS Certifications Required	
27	Warranty	Three years warranty	

Item No. 25 – Interactive Screen with Diagonal 65 inches with camera & Mic

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Diagonal Size	65" or higher	
2	Resolution	4K UHD or higher	
3	Brightness (typical)	Brightness: 400 nits or higher (typical).	
4	Contrast ratio (typical)	1100:1 or higher	
5	CPU	Octa-Core or better	
6	Memory (RAM)	8GB or higher	
7	Storage (ROM)	128 GB or higher	
8	OS	Android 14.0 or better	
9	Panel life	50,000 hrs or higher	
10	Touch Glass	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable.	
11	Touch points	40 or higher	
12	Touch response time	Touch response time: 8 ms or better.	
13	Connectivity - Minimum Ports	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.	
14	Additional Features	Smart Eye Protection, Anti-glare coating	
15	Camera	Camera and microphone: The specified AI camera and microphone array may be integrated or supplied as an external OEM/OEM-authorized unit as part of the standard supply, provided the complete solution meets or exceeds the specified resolution, AI framing/tracking, pickup and conferencing functions and carries a unified warranty.	
16	Speakers	20-Watt x 2 speakers or better	
17	Wi-fi	Wi-fi (2.4 & 5 GHz) or better	
18	Bluetooth	Bluetooth version 5.2 or higher	
19	Whiteboard Interactive Software (Android) Features	· Multi-touch writing (multiple users simultaneously) · Pen, marker, highlighter tools · Adjustable pen thickness and colors · Eraser (finger, pen-end, or tool-based) · Lasso/select tool to move or resize content · Geometrical Tools	
20	Wireless screen sharing	Share/mirror the content of an external device wirelessly on the interactive panel	
21	Power Supply	AC 100-240V 50/60Hz	
22	Operating temperature	0°C ~ 40°C or Better	
23	Operating Humidity	10% ~ 80% RH Non-Condensing or Better	
24	Accessories	Wall mount Kit, Remote, 2 x Stylus, 1x HDMI Cable (1.5 Meter), 1x USB A to B cable (1.5 Meter), 1x Power Cable (1.5 Meter)	
25	Magnetic pen holder	Magnetic pen holder for two pens	
26	Certifications	BIS Certifications Required	
27	Warranty	Three years warranty	

Item No. 26 – Interactive Screen with Diagonal 75 inches with camera & Mic

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Diagonal Size	75" or higher	
2	Resolution	4K UHD or higher	
3	Brightness (typical)	Brightness: 400 nits or higher (typical).	
4	Contrast ratio (typical)	1100:1 or higher	
5	CPU	Octa-Core or better	
6	Memory (RAM)	8GB or higher	
7	Storage (ROM)	128 GB or higher	
8	OS	Android 14.0 or better	
9	Panel life	50,000 hrs or higher	
10	Touch Glass	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable.	
11	Touch points	40 or higher	
12	Touch response time	Touch response time: 8 ms or better.	
13	Connectivity - Minimum Ports	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.	
14	Additional Features	Smart Eye Protection, Anti-glare coating	
15	Camera	Camera and microphone: The specified AI camera and microphone array may be integrated or supplied as an external OEM/OEM-authorized unit as part of the standard supply, provided the complete solution meets or exceeds the specified resolution, AI framing/tracking, pickup and conferencing functions and carries a unified warranty.	
16	Speakers	20-Watt x 2 speakers or better	
17	Wi-fi	Wi-fi (2.4 & 5 GHz) or better	
18	Bluetooth	Bluetooth version 5.2 or higher	
19	Whiteboard Interactive Software (Android) Features	· Multi-touch writing (multiple users simultaneously) · Pen, marker, highlighter tools · Adjustable pen thickness and colors · Eraser (finger, pen-end, or tool-based) · Lasso/select tool to move or resize content · Geometrical Tools	
20	Wireless screen sharing	Share/mirror the content of an external device wirelessly on the interactive panel	
21	Power Supply	AC 100-240V 50/60Hz	
22	Operating temperature	0°C ~ 40°C or Better	
23	Operating Humidity	10% ~ 80% RH Non-Condensing or Better	
24	Accessories	Wall mount Kit, Remote, 2 x Stylus, 1x HDMI Cable (1.5 Meter), 1x USB A to B cable (1.5 Meter), 1x Power Cable (1.5 Meter)	
25	Magnetic pen holder	Magnetic pen holder for two pens	
26	Certifications	BIS Certifications Required	
27	Warranty	Three years warranty	

Item No. 27 – Interactive Screen with Diagonal 86 inches with camera & Mic

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Diagonal Size	86" or higher	
2	Resolution	4K UHD or higher	
3	Brightness (typical)	Brightness: 400 nits or higher (typical).	
4	Contrast ratio (typical)	1100:1 or higher	
5	CPU	Octa-Core or better	
6	Memory (RAM)	8GB or higher	
7	Storage (ROM)	128 GB or higher	
8	OS	Android 14.0 or better	
9	Panel life	50,000 hrs or higher	
10	Touch Glass	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable.	
11	Touch points	40 or higher	
12	Touch response time	Touch response time: 8 ms or better.	
13	Connectivity - Minimum Ports	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.	
14	Additional Features	Smart Eye Protection, Anti-glare coating	
15	Camera	Camera and microphone: The specified AI camera and microphone array may be integrated or supplied as an external OEM/OEM-authorized unit as part of the standard supply, provided the complete solution meets or exceeds the specified resolution, AI framing/tracking, pickup and conferencing functions and carries a unified warranty.	
16	Speakers	20-Watt x 2 speakers or better	
17	Wi-fi	Wi-fi (2.4 & 5 GHz) or better	
18	Bluetooth	Bluetooth version 5.2 or higher	
19	Whiteboard Interactive Software (Android) Features	· Multi-touch writing (multiple users simultaneously) · Pen, marker, highlighter tools · Adjustable pen thickness and colors · Eraser (finger, pen-end, or tool-based) · Lasso/select tool to move or resize content · Geometrical Tools	
20	Wireless screen sharing	Share/mirror the content of an external device wirelessly on the interactive panel	
21	Power Supply	AC 100-240V 50/60Hz	
22	Operating temperature	0°C ~ 40°C or Better	
23	Operating Humidity	10% ~ 80% RH Non-Condensing or Better	
24	Accessories	Wall mount Kit, Remote, 2 x Stylus, 1x HDMI Cable (1.5 Meter), 1x USB A to B cable (1.5 Meter), 1x Power Cable (1.5 Meter)	
25	Magnetic pen holder	Magnetic pen holder for two pens	
26	Certifications	BIS Certifications Required	
27	Warranty	Three years warranty	

Item No. 28 – Interactive Screen with Diagonal 98 inches with camera & Mic

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Diagonal Size	98" or higher	
2	Resolution	4K UHD or higher	
3	Brightness (typical)	Brightness: 400 nits or higher (typical).	
4	Contrast ratio (typical)	1100:1 or higher	
5	CPU	Processor: Quad-core or better OEM processor/SoC capable of smooth 4K display, touch, whiteboard, casting and multitasking operation. No specific processor model shall be mandatory; compliance shall be supported by the OEM datasheet/undertaking.	
6	Memory (RAM)	8GB or higher	
7	Storage (ROM)	Internal storage: 64 GB or higher.	
8	OS	Operating system: Android 13 or later, with OEM security updates and support during the warranty period.	
9	Panel life	50,000 hrs or higher	
10	Touch Glass	4 mm tempered glass or better	
11	Touch points	40 or higher	
12	Touch response time	6 ms or better	
13	Connectivity - Minimum Ports	USB 3.0 Type A - 3, USB Type C - 1, HDMI In - 2, RJ45 - 1, Mic in - 1, Earphone – 1	
14	Additional Features	Smart Eye Protection, Anti-glare coating	
15	Camera	Camera and microphone: The specified AI camera and microphone array may be integrated or supplied as an external OEM/OEM-authorized unit as part of the standard supply, provided the complete solution meets or exceeds the specified resolution, AI framing/tracking, pickup and conferencing functions and carries a unified warranty.	
16	Speakers	Built-in audio: Minimum 15 W × 2 speakers. A higher-output built-in or supplied external audio system shall be acceptable.	
17	Wi-fi	Wi-fi (2.4 & 5 GHz) or better	
18	Bluetooth	Bluetooth: Version 5.0 or higher.	
19	Whiteboard Interactive Software (Android) Features	· Multi-touch writing (multiple users simultaneously) · Pen, marker, highlighter tools · Adjustable pen thickness and colors · Eraser (finger, pen-end, or tool-based) · Lasso/select tool to move or resize content · Geometrical Tools	
20	Wireless screen sharing	Share/mirror the content of an external device wirelessly on the interactive panel	
21	Power Supply	AC 100-240V 50/60Hz	
22	Operating temperature	0°C ~ 40°C or Better	
23	Operating Humidity	10% ~ 80% RH Non-Condensing or Better	
24	Accessories	Wall mount Kit, Remote, 2 x Stylus, 1x HDMI Cable (1.5 Meter), 1x USB A to B cable (1.5 Meter), 1x Power Cable (1.5 Meter)	
25	Magnetic pen holder	Magnetic pen holder for two pens	
26	Certifications	BIS Certifications Required	
27	Warranty	Three years warranty	

Item No. 29 – Interactive Screen with Diagonal 110 inches with camera & Mic

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Diagonal Size	110" or higher	
2	Resolution	4K UHD or higher	
3	Brightness (typical)	Brightness: 400 nits or higher (typical).	
4	Contrast ratio (typical)	1100:1 or higher	
5	CPU	Octa-Core or better	
6	Memory (RAM)	8GB or higher	
7	Storage (ROM)	128 GB or higher	
8	OS	Android 14.0 or better	
9	Panel life	50,000 hrs or higher	
10	Touch Glass	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable.	
11	Touch points	40 or higher	
12	Touch response time	6 ms or better	
13	Connectivity - Minimum Ports	USB 3.0 Type A - 3, USB Type C - 1, HDMI In - 2, RJ45 - 1, Mic in - 1, Earphone – 1	
14	Additional Features	Smart Eye Protection, Anti-glare coating	
15	Camera	48MP AI Camera with inbuilt 6-microphone array	
16	Speakers	20-Watt x 2 speakers or better	
17	Wi-fi	Wi-fi (2.4 & 5 GHz) or better	
18	Bluetooth	Bluetooth version 5.2 or higher	
19	Whiteboard Interactive Software (Android) Features	· Multi-touch writing (multiple users simultaneously) · Pen, marker, highlighter tools · Adjustable pen thickness and colors · Eraser (finger, pen-end, or tool-based) · Lasso/select tool to move or resize content · Geometrical Tools	
20	Wireless screen sharing	Share/mirror the content of an external device wirelessly on the interactive panel	
21	Power Supply	AC 100-240V 50/60Hz	
22	Operating temperature	0°C ~ 40°C or Better	
23	Operating Humidity	10% ~ 80% RH Non-Condensing or Better	
24	Accessories	Wall mount Kit, Remote, 2 x Stylus, 1x HDMI Cable (1.5 Meter), 1x USB A to B cable (1.5 Meter), 1x Power Cable (1.5 Meter)	
25	Magnetic pen holder	Magnetic pen holder for two pens	
26	Certifications	BIS Certifications Required	
27	Warranty	Three years warranty	

Item No. 30 : Interactive Screen with Diagonal 65 inch (EDLA certified)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Diagonal Size	65" or higher	
2	Resolution	4K UHD or higher	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
3	Brightness (typical)	Brightness: 400 nits or higher (typical).	
4	Contrast ratio (typical)	Contrast ratio: 1100:1 or higher (native/static). No change; any higher offered value shall be acceptable.	
5	CPU	Octa-Core or better	
6	Memory (RAM)	8GB or higher	
7	Storage (ROM)	Storage: Minimum 64 GB. An offered configuration with 128 GB or higher shall be compliant.	
8	OS	Operating system: Android 14 or later with valid Google EDLA certification for the offered model. An offered model upgradable to a later Android version shall be acceptable.	
9	EDLA Certification	Should be verifiable online (google website) and on device (play store)	
10	Panel life	50,000 hrs or higher	
11	Touch Glass	3.2 mm tempered glass or better	
12	Touch points	40 or higher	
13	Touch response time	8 ms or better	
14	Connectivity - Minimum Ports	USB 3.0 Type A - 2, USB Type C - 1, HDMI In - 2, RJ45 - 1	
15	Additional Features	Smart Eye Protection, Anti-glare coating	
16	Speakers	20-Watt x 2 speakers or better	
17	Wi-fi	Wi-Fi 6 / Wi-Fi 6E or better	
18	Bluetooth	Bluetooth: Version 5.2 or higher. An offered version 5.3 or later shall be compliant.	
19	Whiteboard Interactive Software (Android) Features	· Multi-touch writing (multiple users simultaneously) · Pen, marker, highlighter tools · Adjustable pen thickness and colors · Eraser (finger, pen-end, or tool-based) · Lasso/select tool to move or resize content · Geometrical Tools	
20	Wireless screen sharing	Share/mirror the content of an external device wirelessly on the interactive panel	
21	Power Supply	AC 100-240V 50/60Hz	
22	Operating temperature	0°C ~ 40°C or Better	
23	Operating Humidity	10% ~ 80% RH Non-Condensing or Better	
24	Accessories	Wall mount Kit, Remote, 2 x Stylus, 1x HDMI Cable (1.5 Meter), 1x USB A to B cable (1.5 Meter), 1x Power Cable (1.5 Meter)	
25	Magnetic pen holder	Magnetic pen holder for two pens	
26	Certifications	BIS & EDLA Certificate required	
27	Warranty	Three years warranty	

Item No. 31 : Interactive Screen with Diagonal 75 inch (EDLA certified)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Diagonal Size	75" or higher	
2	Resolution	4K UHD or higher	
3	Brightness (typical)	Brightness: 400 nits or higher (typical).	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
4	Contrast ratio (typical)	Contrast ratio: 1100:1 or higher (native/static). No change; any higher offered value shall be acceptable.	
5	CPU	Octa-Core or better	
6	Memory (RAM)	8GB or higher	
7	Storage (ROM)	Storage: Minimum 64 GB. An offered configuration with 128 GB or higher shall be compliant.	
8	OS	Operating system: Android 14 or later with valid Google EDLA certification for the offered model. An offered model upgradable to a later Android version shall be acceptable.	
9	EDLA Certification	Should be verifiable online (google website) and on device (play store)	
10	Panel life	50,000 hrs or higher	
11	Touch Glass	3.2 mm tempered glass or better	
12	Touch points	40 or higher	
13	Touch response time	8 ms or better	
14	Connectivity - Minimum Ports	Connectivity: At least 2 × USB Type-A ports, including at least 1 × USB 3.0 or higher, and 1 × USB Type-C. Microphone/earphone functions may be provided through dedicated 3.5 mm ports or equivalent USB/USB-C/HDMI digital audio interfaces; any required adapters shall be included.	
15	Additional Features	Smart Eye Protection, Anti-glare coating	
16	Speakers	20-Watt x 2 speakers or better	
17	Wi-fi	Wi-Fi 6 / Wi-Fi 6E or better	
18	Bluetooth	Bluetooth: Version 5.2 or higher. An offered version 5.3 or later shall be compliant.	
19	Whiteboard Interactive Software (Android) Features	· Multi-touch writing (multiple users simultaneously) · Pen, marker, highlighter tools · Adjustable pen thickness and colors · Eraser (finger, pen-end, or tool-based) · Lasso/select tool to move or resize content · Geometrical Tools	
20	Wireless screen sharing	Share/mirror the content of an external device wirelessly on the interactive panel	
21	Power Supply	AC 100-240V 50/60Hz	
22	Operating temperature	0°C ~ 40°C or Better	
23	Operating Humidity	10% ~ 80% RH Non-Condensing or Better	
24	Accessories	Wall mount Kit, Remote, 2 x Stylus, 1x HDMI Cable (1.5 Meter), 1x USB A to B cable (1.5 Meter), 1x Power Cable (1.5 Meter)	
25	Magnetic pen holder	Stylus storage: Magnetic pen holder, integrated pen tray/slot, clip or equivalent secure holder shall be acceptable. Required styluses shall be supplied.	
26	Certifications	BIS & EDLA Certificate required	
27	Warranty	Three years warranty	

Item No. 32 : Interactive Screen with Diagonal 86 inch (EDLA certified)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Diagonal Size	86" or higher	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
2	Resolution	4K UHD or higher	
3	Brightness (typical)	Brightness: 400 nits or higher (typical).	
4	Contrast ratio (typical)	Contrast ratio: 1100:1 or higher (native/static). No change; any higher offered value shall be acceptable.	
5	CPU	Octa-Core or better	
6	Memory (RAM)	8GB or higher	
7	Storage (ROM)	Storage: Minimum 64 GB. An offered configuration with 128 GB or higher shall be compliant.	
8	OS	Operating system: Android 14 or later with valid Google EDLA certification for the offered model. An offered model upgradable to a later Android version shall be acceptable.	
9	EDLA Certification	Should be verifiable online (google website) and on device (play store)	
10	Panel life	50,000 hrs or higher	
11	Touch Glass	3.2 mm tempered glass or better	
12	Touch points	40 or higher	
13	Touch response time	8 ms or better	
14	Connectivity - Minimum Ports	USB 3.0 Type A - 2, USB Type C - 1, HDMI In - 2, RJ45 - 1	
15	Additional Features	Smart Eye Protection, Anti-glare coating	
16	Speakers	Built-in audio: Minimum 15 W × 2 speakers. A higher-output built-in or supplied external audio system shall be acceptable.	
17	Wi-fi	Wireless: Dual-band Wi-Fi 5 (802.11ac) or higher. Wi-Fi 6/6E is preferred and shall be accepted as higher compliance.	
18	Bluetooth	Bluetooth: Version 5.2 or higher. An offered version 5.3 or later shall be compliant.	
19	Whiteboard Interactive Software (Android) Features	· Multi-touch writing (multiple users simultaneously) · Pen, marker, highlighter tools · Adjustable pen thickness and colors · Eraser (finger, pen-end, or tool-based) · Lasso/select tool to move or resize content · Geometrical Tools	
20	Wireless screen sharing	Share/mirror the content of an external device wirelessly on the interactive panel	
21	Power Supply	AC 100-240V 50/60Hz	
22	Operating temperature	0°C ~ 40°C or Better	
23	Operating Humidity	10% ~ 80% RH Non-Condensing or Better	
24	Accessories	Wall mount Kit, Remote, 2 x Stylus, 1x HDMI Cable (1.5 Meter), 1x USB A to B cable (1.5 Meter), 1x Power Cable (1.5 Meter)	
25	Magnetic pen holder	Magnetic pen holder for two pens	
26	Certifications	BIS & EDLA Certificate required	
27	Warranty	Three years warranty	

Item No. 33 : Interactive Screen with Diagonal 98 inch (EDLA certified)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Diagonal Size	98" or higher	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
2	Resolution	4K UHD or higher	
3	Brightness (typical)	500 nits or higher	
4	Contrast ratio (typical)	1100:1 or higher	
5	CPU	Octa-Core or better	
6	Memory (RAM)	8GB or higher	
7	Storage (ROM)	64 GB or higher	
8	OS	Android 16.0 or better (EDLA-Certified)	
9	EDLA Certification	Should be verifiable online (google website) and on device (play store)	
10	Panel life	50,000 hrs or higher	
11	Touch Glass	3.2 mm tempered glass or better	
12	Touch points	40 or higher	
13	Touch response time	8 ms or better	
14	Connectivity - Minimum Ports	USB 3.0 Type A - 2, USB Type C - 1, HDMI In - 2, RJ45 - 1	
15	Additional Features	Smart Eye Protection, Anti-glare coating	
16	Speakers	20-Watt x 2 speakers or better	
17	Wi-fi	Wi-Fi 6 / Wi-Fi 6E or better	
18	Bluetooth	Bluetooth 5.0 or higher	
19	Whiteboard Interactive Software (Android) Features	· Multi-touch writing (multiple users simultaneously) · Pen, marker, highlighter tools · Adjustable pen thickness and colors · Eraser (finger, pen-end, or tool-based) · Lasso/select tool to move or resize content · Geometrical Tools	
20	Wireless screen sharing	Share/mirror the content of an external device wirelessly on the interactive panel	
21	Power Supply	AC 100-240V 50/60Hz	
22	Operating temperature	0°C ~ 40°C or Better	
23	Operating Humidity	10% ~ 80% RH Non-Condensing or Better	
24	Accessories	Wall mount Kit, Remote, 2 x Stylus, 1x HDMI Cable (1.5 Meter), 1x USB A to B cable (1.5 Meter), 1x Power Cable (1.5 Meter)	
25	Magnetic pen holder	Magnetic pen holder for two pens	
26	Certifications	BIS & EDLA Certificate required	
27	Warranty	Three years warranty	

Item No. 34 : Interactive Screen with Diagonal 110 inch (EDLA certified)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Diagonal Size	The item shall remain an interactive display of the specified size and shall meet all published touch and interactive functionality requirements.	
2	Resolution	4K UHD or higher	
3	Brightness (typical)	500 nits or higher	
4	Contrast ratio (typical)	1100:1 or higher	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
5	CPU	Octa-Core or better	
6	Memory (RAM)	8GB or higher	
7	Storage (ROM)	64 GB or higher	
8	OS	Android 16.0 or better (EDLA-Certified)	
9	EDLA Certification	Should be verifiable online (google website) and on device (play store)	
10	Panel life	50,000 hrs or higher	
11	Touch Glass	3.2 mm tempered glass or better	
12	Touch points	40 or higher	
13	Touch response time	8 ms or better	
14	Connectivity - Minimum Ports	USB 3.0 Type A - 2, USB Type C - 1, HDMI In - 2, RJ45 - 1	
15	Additional Features	Smart Eye Protection, Anti-glare coating	
16	Speakers	20-Watt x 2 speakers or better	
17	Wi-fi	Wi-Fi 6 / Wi-Fi 6E or better	
18	Bluetooth	Bluetooth 5.0 or higher	
19	Whiteboard Interactive Software (Android) Features	· Multi-touch writing (multiple users simultaneously) · Pen, marker, highlighter tools · Adjustable pen thickness and colors · Eraser (finger, pen-end, or tool-based) · Lasso/select tool to move or resize content · Geometrical Tools	
20	Wireless screen sharing	Share/mirror the content of an external device wirelessly on the interactive panel	
21	Power Supply	AC 100-240V 50/60Hz	
22	Operating temperature	0°C ~ 40°C or Better	
23	Operating Humidity	10% ~ 80% RH Non-Condensing or Better	
24	Accessories	Wall mount Kit, Remote, 2 x Stylus, 1x HDMI Cable (1.5 Meter), 1x USB A to B cable (1.5 Meter), 1x Power Cable (1.5 Meter)	
25	Magnetic pen holder	Magnetic pen holder for two pens	
26	Certifications	BIS & EDLA Certificate required	
27	Warranty	Three years warranty	

Item No. 35: Sliding Screen with Safety Lockable Enclosure for 65” Interactive Display

Sr. No.	Minimum Technical Specification	Compliance (Yes/ No)
1	Outer Length of Frame: As per the dimension of panel	
2	Outer width of Frame: As per the dimension of panel	
3	Thickness of Frame (Depth): 210 mm	
4	Frame is made of Aluminium	
5	2 numbers boards with movable whiteboard with lock & key and 2. no's of white/Green board in background. Base material with 14 mm thickness. Movable board is having lock system to safe IFPD from vandalism	
6	Front metal sheet is having thickness 0.3 mm	

Sr. No.	Minimum Technical Specification	Compliance (Yes/ No)
7	Back Side metal sheet is colour coated/ GI sheet with thickness of 0.2- 0.3mm	
8	Whole system is mounted on the wall with the help of metal clamps	
9	Three years warranty	

Item No. 36: Sliding Screen with Safety Lockable Enclosure for 75" Interactive Display

Sr. No.	Minimum Technical Specification	Compliance (Yes/ No)
1	Outer Length of Frame: As per the dimension of panel	
2	Outer width of Frame: As per the dimension of panel	
3	Thickness of Frame (Depth): 210 mm	
4	Frame is made of Aluminium	
5	2 numbers boards with movable whiteboard with lock & key and 2. no's of white/Green board in background. Base material with 14 mm thickness. Movable board is having lock system to safe IFPD from vandalism	
6	Front metal sheet is having thickness 0.3 mm	
7	Back Side metal sheet is colour coated/ GI sheet with thickness of 0.2- 0.3mm	
8	Whole system is mounted on the wall with the help of metal clamps	
9	Three years warranty	

Item No. 37: Digital Podium

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Type/Mounting	Free Standing	
2	Construction	Construction: Lockable wheel-mounted powder-coated steel podium with a durable wooden/laminated or metallic top, sliding/lockable cover, protected internal housing for the visual presenter and concealed ports when closed. All exposed edges shall be safely finished.	
3	Display	Built-in highly sensitive Interactive Panel with adjustable Motorized tilt & a mechanism to make the Panel stable so that it does not shake while writing with following minimum features -	
4	Display Size	21.5 inch or higher	
5	Panel Type	IPS Technology	
6	Active area(mm)	Active display area suitable for 21.5 inch or higher display	
7	Resolution	1920 x 1080 Full HD or better	
8	Light Source	LED	
9	Brightness	350 cd/m² or higher	
10	Contrast Ratio	Display contrast ratio: 1000:1 or higher (native/static).	
11	Colours	16.7M or better	
12	Aspect Ratio	16:09	
13	Response Time (Typical GTG)	8ms or better	
14	Operational Hours	30000 Hours or higher	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
15	Viewing Angles	178º horizontal, 178º vertical	
16	Curvature	Flat	
17	Colour Gamut	72% or better	
18	Interactive Method	Pen-based interactive technology	
19	Touch Type	Touch input: Finger touch and compatible stylus/pen through PCAP, IR or equivalent technology. The pen may be passive/battery-free or active, provided all required accessories are supplied.	
20	Touch Accuracy	Touch accuracy: ±2 mm or better across the active touch area.	
21	Touch Response	Continuous touch:8ms	
22	Touch Screen	Multi-touch Points	
23	Control Buttons	Display controls: Power, menu/settings and image/level adjustment shall be available through physical keys, on-screen controls, remote control or an integrated controller; dedicated buttons for every function are not mandatory.	
24	Connectivity (Minimum)	HDMI x1, USB x1 or better	
25	Pen Type	Pen: Passive/battery-free, rechargeable or battery-powered compatible pen shall be accepted. Any required charger/batteries and at least one spare set for the warranty period shall be supplied.	
26	Display Stand	Display mount/stand: The display shall support stable tilt adjustment and shall be securely integrated with the podium. A separate table-standing configuration is not mandatory.	
27	Power Supply	12V DC	
28	Certifications	BIS certification is required for the display. The BIS certificate for the display must be registered in the name of the Podium's OEM	
29	System Details		
30	Processor	Intel Core i5 (10th Gen or better processor)	
31	In-Built Wi-Fi /Wireless LAN Card	Should have an inbulit Wi-Fi / Wireless LAN Card	
32	RAM	8 GB or higher	
33	Storage	256 GB SSD or better	
34	Ports (Min.)	HDMI x 1, USB ports x 4, LAN Port x 1	
35	Keyboard & Mouse	Wireless	
36	Operating System	Windows 11 Professional	
37	Certifications	BIS certification required for applicable electronic components such as display and computing device	
38	Controller		
39	Ports on front Panel of Controller (Minimum)	Controller connectivity may be distributed between the front/rear controller panel and integrated PC. Minimum overall interfaces: 2 × HDMI input, 1 × HDMI output, 2 × USB Type-A including 1 × USB 3.0, audio input and output (analogue or digital), and LAN. USB-C may be offered. VGA, RCA and RS232 are not mandatory where equivalent digital connectivity/control is provided; required adapters shall be included.	
40	Buttons on front Panel of Controller (Minimum)	Controller operation: Volume up/down, mute, source selection and power control shall be available through physical buttons, touch controls, remote control or software. Dedicated buttons for each named source are not mandatory.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
41	Ports on Rear Panel of Controller (Minimum)	Rear/system interfaces shall include at least 1 × HDMI output, 1 × USB 3.0, audio/speaker output and microphone input; LAN/PoE or equivalent network connectivity shall be provided where required. VGA and RCA interfaces are not mandatory if equivalent digital interfaces and necessary adapters are supplied.	
42	Built in HDMI Repeater	Yes (HDMI Output port should support 15mtr HDMI cable)	
43	Controller Resolution Output	1980 X 1080 FULL HD	
44	Power	5 V DC (Suitable Adaptor should be supplied with controller)	
45	Built in devices		
46	Gooseneck Microphone	Gooseneck microphone: XLR output, phantom powered, on/off control with status indication, suitable podium-length flexible neck, and cardioid, super-cardioid, hyper-cardioid or lobar pickup pattern.	
47	Built in Amplifier Power	Amplifier: Class-D DSP amplifier, minimum 200 W rated output or adequate matched output for the supplied speakers, with at least 2 microphone inputs and 2 line/audio inputs.	
48	Speakers	Speaker system: Minimum 200 W aggregate rated output, using either 2 × 100 W or 4 × 50 W (or an equivalent configuration), two-way design, nominal 8-ohm system where applicable, with suitable mounting brackets and coverage for the intended room.	
49	Wireless Microphone Units	Wireless Hand Held & Lapel microphone with receiver.	
50	Sliding Trays	Provision for keeping laptop and Keyboard & Mouse	
51	Power Supply	180 -240V, 50Hz, AC Supply	
52	Fans	Suitable cooling fans to be provided in the lower body.	
53	Logo	Should be provided with Acrylic logo	
54	Warranty	Three years warranty	

Item No. 38: Digital Podium with Front Display

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Type/Mounting	Free Standing	
2	Construction	Construction: Lockable wheel-mounted powder-coated steel podium with a durable wooden/laminated or metallic top, sliding/lockable cover, protected internal housing for the visual presenter and concealed ports when closed. All exposed edges shall be safely finished.	
3	Display	Built-in highly sensitive Interactive Panel with adjustable Motorized tilt & a mechanism to make the Panel stable so that it does not shake while writing with following minimum features -	
4	Display Size	21.5 inch or higher	
5	Panel Type	IPS Technology	
6	Active area(mm)	Active display area suitable for 21.5-inch or higher display	
7	Resolution	1920 x 1080 Full HD or better	
8	Light Source	LED	
9	Brightness	350 cd/m² or higher	
10	Contrast Ratio	Display contrast ratio: 1000:1 or higher (native/static).	
11	Colours	16.7M or better	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
12	Aspect Ratio	16:09	
13	Response Time (Typical GTG)	8ms or better	
14	Operational Hours	30000 Hours or higher	
15	Viewing Angles	178º horizontal, 178º vertical	
16	Curvature	Flat	
17	Colour Gamut	72% or better	
18	Interactive Method	Pen-based interactive technology	
19	Touch Type	Touch input: Finger touch and compatible stylus/pen through PCAP, IR or equivalent technology. The pen may be passive/battery-free or active, provided all required accessories are supplied.	
20	Touch Accuracy	Touch accuracy: ±2 mm or better across the active touch area.	
21	Touch Response	First touch:30ms; Continuous touch:5ms	
22	Touch Screen	Multi-touch Points	
23	Control Buttons	Display controls: Power, menu/settings and image/level adjustment shall be available through physical keys, on-screen controls, remote control or an integrated controller; dedicated buttons for every function are not mandatory.	
24	Connectivity (Minimum)	HDMI x1, USB x1 or better	
25	Pen Type	Pen: Passive/battery-free, rechargeable or battery-powered compatible pen shall be accepted. Any required charger/batteries and at least one spare set for the warranty period shall be supplied.	
26	Display Stand	Display mount/stand: The display shall support stable tilt adjustment and shall be securely integrated with the podium. A separate table-standing configuration is not mandatory.	
27	Power Supply	12V DC	
28	Certifications	BIS certification is required for the display. The BIS certificate for the display must be registered in the name of the Podium's OEM	
29	System Details		
30	Processor	Intel Core i5 (10th Gen or better processor)	
31	In-Built Wi-Fi /Wireless LAN Card	Should have an inbulit Wi-Fi / Wireless LAN Card	
32	RAM	8 GB	
33	Storage	256 GB SSD or better	
34	Ports (Min.)	HDMI x 1, USB ports x 4, LAN Port x 1	
35	Keyboard & Mouse	Wireless	
36	Operating System	Windows 11 Professional	
37	Certifications	BIS certification required for applicable electronic components such as display and computing device	
38	Controller		
39	Ports on front Panel of Controller (Minimum)	Controller connectivity may be distributed between the front/rear controller panel and integrated PC. Minimum overall interfaces: 2 × HDMI input, 1 × HDMI output, 2 × USB Type-A including 1 × USB 3.0, audio input and output (analogue or digital), and LAN. USB-C may be offered. VGA, RCA and RS232 are not mandatory where equivalent digital connectivity/control is provided; required adapters shall be included.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
40	Buttons on front Panel of Controller (Minimum)	Controller operation: Volume up/down, mute, source selection and power control shall be available through physical buttons, touch controls, remote control or software. Dedicated buttons for each named source are not mandatory.	
41	Ports on Rear Panel of Controller (Minimum)	Rear/system interfaces shall include at least 1 × HDMI output, 1 × USB 3.0, audio/speaker output and microphone input; LAN/PoE or equivalent network connectivity shall be provided where required. VGA and RCA interfaces are not mandatory if equivalent digital interfaces and necessary adapters are supplied.	
42	Built in HDMI Repeater	Yes (HDMI Output port should support 15mtr HDMI cable)	
43	Controller Resolution Output	1980 X 1080 FULL HD	
44	Power	5 V DC (Suitable Adaptor should be supplied with controller)	
45	Built in devices		
46	Gooseneck Microphone	Gooseneck microphone: XLR output, phantom powered, on/off control with status indication, suitable podium-length flexible neck, and cardioid, super-cardioid, hyper-cardioid or lobar pickup pattern.	
47	Wireless Microphone Units	One Handheld and one Lapel Mic should be supplied.	
48	Sliding Trays	Provision for keeping laptop and Keyboard & Mouse	
49	Power Supply	180 -240V, 50Hz, AC Supply	
50	Fans	Suitable cooling fans to be provided in the lower body.	
51	Front Display	Minimum 32-inchHD IPS display with anti-glare coating and wide viewing angles (178°). The display shall support HDMI / VGA inputs and suitable operating conditions for indoor usage	
52	Display type	IPS with LED backlight	
53	Display size (diagonal)	32”	
54	Viewing angle	178° horizontal; 178° vertical	
55	Brightness	250 cd/m²	
56	Contrast ratio	5000:1	
57	Response Ratio	6ms	
58	Aspect ratio	16:09	
59	Native resolution	HD 1280 x 720 @ 30 Hz	
60	Resolutions supported	1024 x 768; 1280 x 1024; 1280 x 720; 1280 x 800; 1440 x 900; 1600 x 900; 1680 x 1050;; 640x 480; 720 x 400; 800 x 600	
61	Display features	Anti-glare; BrightView Panel; Language selection; LED Backlights; On-screen controls; Plug and Play; User programmable; Anti-static	
62	User controls	Brightness; Color Control; Contrast; Exit; Image Control; Information; Input Control; Language; Management; Menu; Power Control	
63	Input signal	DVI-D/ VGA/ HDMI, USB, LAN, AUDIO	
64	Environmental	Operating temperature: 5 to 40°C; Operating humidity: 20 to 80% RH	
65	Power	Input voltage: 100 to 240 VAC	
66	PC Specs for front Display		
67	Processor	Intel core i3	
68	System Memory	2 GB RAM	
69	Flash Memory	32 GB	
70	Graphic	Intel HD Graphics	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
71	OS Supported	Windows 10 / Ubuntu / Android	
72		HDMI x 1 /VGA x 1	
73		1 xUSB 2.0	
74		1 xUSB 3.0	
75		Lan Port (10/100/1000) x 1	
76	Power	5V/2A	
77	Wireless Connectivity	On Board Wi-Fi /Bluetooth	
78	Digital Signage Software		
79		Integrated content control system where display handling, layout configuration, and content flow operate together as a single unified process	
80	Content Creator	Allow centralized control of multiple screens with each device uniquely identified and manageable from the admin interface, including the ability to remotely deactivate or detach any device when required.	
81		Support pre-built screen templates with automatic adjustment of content based on orientation and layout selection, while also providing a preview option to verify how the final output will appear before publishing.	
82	Content Manager	Content handling shall be seamless, allowing users to upload, organize, add, and remove media such as images, videos, and documents, and combine them into playlists that can be assigned and controlled across devices.	
83		Playback shall be governed through an integrated scheduling mechanism where content, playlists, and display behavior can be time-controlled and automated without manual intervention.	
84		On-screen elements such as scrolling text or information bars shall be optionally enabled, with customization in appearance and behavior, or replaced with live information feeds when required.	
85	Content Player	A real-time clock display shall also be supported within these elements.	
86		User access shall follow a structured hierarchy where higher-level users can create and manage other users and administrators, with secure verification during account creation.	
87		The system shall function as a centralized yet flexible solution where device control, content management, scheduling, and user access are interconnected, ensuring smooth and controlled digital display operations.	
88	Warranty	Three years warranty	

Item No 39: 135 inch All in One LED Display

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Screen size	135" or higher	
2	Environment	Indoor	
3	Pixel Pitch	1.56 mm or better	
4	Resolution (pixel)	Full HD 1920x1080 or better	
5	Aspect Ration	16:09	
6	Brightness	Brightness: 500 nits or higher for the indoor 135-inch COB LED display.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
7	Brightness Uniformity	≥97 % or better	
8	Contrast Ratio	5000:1 or more	
9	Colour Temperature	2000-9600 Adjustable or better	
10	Acoustic Noise	Fan less operation	
11	Gap Between Modules	Seamless & zero bezel width	
12	Maintenance	Front Maintenance with COB Panels	
13	Display Type	All in One LED Display with Latest COB Technology	
14	Drive Mode	Constant Current Drive	
15	Viewing Angle	H: 160 degree; V: 160 degree	
16	Video Frame Rate	60Hz or better	
17	Refresh Rate	3840 Hz or better	
18	Viewing Distance	≥1.6 m or better	
19	High Dynamic Range	Supported	
20	Colour depth bit)	12 bit or higher	
21	Sound Bar	Audio: Integrated and/or supplied external audio system with minimum 40 W total rated output. All mounting, cabling and integration shall be included.	
22	Audiovisual Interface	Input ports: 2 × HDMI 2.0 inputs, 1 × USB 2.0 and 2 × RJ45 (Gigabit). USB connectivity: At least 1 × USB 3.0 or higher, or equivalent USB-C high-speed interface, with any required adapter supplied.	
23		External audio output: SPDIF, HDMI ARC/eARC, 3.5 mm line-out or equivalent digital/analogue audio output shall be accepted.	
24	Operating System	Operating system: Android 11 or later, Tizen, webOS or equivalent OEM commercial-display operating system supporting all specified signage, casting, remote-management and security-update functions. Required licences/subscriptions for the warranty period shall be included and disclosed.	
25	Processor	Processor: OEM purpose-built multi-core display processor/SoC capable of Full-HD/4K multimedia processing, signage, casting and the specified smart functions. A particular ARM core combination shall not be mandatory; OEM evidence shall be submitted.	
26		processor or better	
27	RAM	Memory: Minimum 2 GB RAM, or the OEM-standard embedded memory architecture for a purpose-built commercial-display OS, provided all specified functions operate concurrently.	
28	Storage	Internal storage: Minimum 16 GB, with adequate usable capacity for the OS, applications and locally cached content required for all specified functions.	
29	Control Buttons	Should have minimum: Volume +/-, Brightness +/-, Signal Switching & On/Off buttons on remote control	
30	Wireless Connectivity	Wireless/network connectivity: Dual-band Wi-Fi and Bluetooth 5.0 or higher, or equivalent integrated wireless arrangement. Hotspot mode is desirable but shall not be mandatory where LAN/Wi-Fi infrastructure provides connectivity.	
31	Magnetic Modules	Should have magnetically cabinets to allow rapid installations	
32	Heat dissipation	Should have Aluminium-made cabinets facilitate excellent heat dissipation for higher reliability	
33	Protection	Should have Fully-sealed back shell allows higher protection to run stably	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
34	Remote control	Should have Remote control to operate the display	
35	Wireless screen sharing	Display should allow user to share/mirror the content of Laptop/Desktop and mobile device (Android) wirelessly and should have Screen Share software to show up to 4 Multiple screens at same time.	
36	Smart Eye Protection	Supports one-click eye protection mode	
37	Max Power Consumption	Maximum power consumption: 1,600 W or lower for the complete 135-inch display. The OEM-rated maximum value shall be declared.	
38	Average Power Consumption	Typical/average power consumption: 800 W or lower for the complete 135-inch display. The OEM-rated test condition and value shall be declared.	
39	Input Voltage	100-240V AC, 50~60Hz	
40	Operating Temperature	Operating temperature: 0°C to 40°C or wider.	
41	Operating Humidity	10~80%RH	
42	LED Life Time	≥100,000 Hours or More	
43	Certification	Certification: Valid BIS registration/certification for the offered model wherever legally applicable. Manufacturing location shall not by itself determine compliance; Make-in-India/local-content eligibility, if applicable, shall be assessed separately under the prevailing procurement order. Product catalogue shall be available on the OEM website.	
44	Warranty	Three years warranty	

Item No 40: 162 inch All in One LED Display

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Screen size	162" or higher	
2	Environment	Indoor	
3	Pixel Pitch	1.87 mm or better	
4	Resolution (pixel)	Full HD 1920x1080 or better	
5	Aspect Ration	16:09	
6	Brightness	Brightness: 600 nits or higher for the indoor 162-inch COB LED display.	
7	Brightness Uniformity	≥97 % or better	
8	Contrast Ratio	10000:1 or more	
9	Colour Temperature	2000-9600 Adjustable or better	
10	Acoustic Noise	Fan less operation	
11	Gap Between Modules	Seamless & zero bezel width	
12	Maintenance	Front Maintenance with COB Panels	
13	Display Type	Display type: Integrated all-in-one or modular cabinet-type COB LED display supplied as a complete turnkey system with seamless assembly, controller, power system, audio, mounting, calibration and front serviceability.	
14	Drive Mode	Constant Current Drive	
15	Viewing Angle	Viewing angle: Minimum 160° horizontal and 160° vertical.	
16	Video Frame Rate	60Hz or better	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
17	Refresh Rate	3840 Hz or better	
18	Viewing Distance	≥1.9 m or better	
19	High Dynamic Range	Supported	
20	Colour depth bit）	12 bit or higher	
21	Sound Bar	built in sound bar with 40 watt x 2 or better	
22	Audiovisual Interface	Input ports: 2 × HDMI 2.0 inputs, 1 × USB 2.0 and 2 × RJ45 (Gigabit). USB connectivity: At least 1 × USB 3.0 or higher, or equivalent USB-C high-speed interface, with any required adapter supplied.	
23		External audio output: SPDIF, HDMI ARC/eARC, 3.5 mm line-out or equivalent digital/analogue audio output shall be accepted.	
24	Operating System	Operating system: Android 11 or later, Tizen, webOS or equivalent OEM commercial-display operating system supporting all specified signage, casting, remote-management and security-update functions. Required licences/subscriptions for the warranty period shall be included and disclosed.	
25	Processor	Processor: OEM purpose-built multi-core display processor/SoC capable of Full-HD/4K multimedia processing, signage, casting and the specified smart functions. A particular ARM core combination shall not be mandatory; OEM evidence shall be submitted.	
27	RAM	Memory: Minimum 2 GB RAM, or the OEM-standard embedded memory architecture for a purpose-built commercial-display OS, provided all specified functions operate concurrently.	
28	Storage	Internal storage: Minimum 16 GB, with adequate usable capacity for the OS, applications and locally cached content required for all specified functions.	
29	Control Buttons	Should have minimum: Volume +/-, Brightness +/-, Signal Switching & On/Off buttons on remote control	
30	Wireless Connectivity	Wireless/network connectivity: Dual-band Wi-Fi and Bluetooth 5.0 or higher, or equivalent integrated wireless arrangement. Hotspot mode is desirable but shall not be mandatory where LAN/Wi-Fi infrastructure provides connectivity.	
31	Magnetic Modules	Should have magnetically cabinets to allow rapid installations	
32	Heat dissipation	Should have Aluminium-made cabinets facilitate excellent heat dissipation for higher reliability	
33	Protection	Should have Fully-sealed back shell allows higher protection to run stably	
34	Remote control	Should have Remote control to operate the display	
35	Wireless screen sharing	Display should allow user to share/mirror the content of Laptop/Desktop and mobile device(Android) wirelessly and should have Screen Share software to show up to 4 Multiple screen at same time.	
36	Smart Eye Protection	Supports one-click eye protection mode	
37	Max Power Consumption	Power consumption shall be declared as OEM-rated maximum and average W/m² and the corresponding calculated total for the offered active screen area. Calculated total shall not exceed 2,200 W maximum and 1,200 W average.	
38	Average Power Consumption	1032 Watt or better	
39	Input Voltage	100-240V AC, 50~60Hz	
40	Operating Temperature	Operating temperature: 0°C to 40°C or wider.	
41	Operating Humidity	10~80%RH	
42	LED Lifetime	≥100,000 Hours or More	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
43	Certification	Certification: Valid BIS registration/certification for the offered model wherever legally applicable. Manufacturing location shall not by itself determine compliance; Make-in-India/local-content eligibility, if applicable, shall be assessed separately under the prevailing procurement order. Product catalogue shall be available on the OEM website.	
44	Warranty	Three years warranty	

Item No. 41: 8-Port Audio Digital Signal Processor

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Signal Processing	32-bit DSP processor suitable for professional audio processing	
2	Audio System Delay	< 1ms or better	
3	Digital-Analog Conversion	24-bit or better	
4	Sampling Rate	48KHz or better	
5	Input Channel	8-channel balanced inputs, Mic/line level	
6	Audio Interface	Phoenix / Euroblock type balanced audio connectors	
7	Input Impedance	≥10kΩ	
8	Maximum Input Level	12dBu/Line, -9dBu/Mic	
9	Phantom Power	+48VDC, 6.5mA, configured in each channel	
10	Output Channel	8-channel balanced outputs, line level	
11	Output Impedance	≤200Ω	
12	Frequency Response	20Hz-20kHz(+-0.5dB)/Line 20Hz-20kHz(+-1.5dB)/Mic	
13	Total harmonic distortion (THD+N)	-90dB (@12dBu,1kHz, A-wt)/Line -86dB (@-7dBu,1kHz, A-wt)/Mic	
14	Signal to Noise Ratio	105dB (@12dBu,1kHz, A-wt)/Line 95dB(@-7dBu,1kHz, A-wt)/Mic	
15	USB Port	USB interface for configuration and control, drive-free	
16	Serial port communication	1x RS232 Port, 1x RS485, or more	
17	GPIO Port	10 pin GPIO port	
18	TCP/IP Network Port	1x RJ-45 Port or more	
19	Indicator Light	Power, network, Link, +48V, input and output audio signal	
20	Menu selection button	Rotating button with selection function or better	
21	Power Supply	AC100V---240V 50/60 Hz	
22	Input/output requirements	Should have minimum 8 channels audio input & 8 channels audio output should support microphone input and line input with easily switching function	
23	Level Sensitivity Adjustment	Adjustable microphone input sensitivity	
24	Phantom Power switching	Each input should have 48V phantom power switch	
25	Audio mixing	Device should have automatic mixing and matrix mixing functions for Audio Signals	
26	PEQ Adjustment	Device should have minimum 16 bands PEQ adjustment for input signal and 10 bands PEQ adjustment for output Signals	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
27	PTZ camera control	Device should support PTZ camera Control to functionate voice tracking functionality	
28	Warranty	Three years warranty	

Item No. 42: 16-Port Audio Digital Signal Processor

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Signal Processing	32-bit DSP processor suitable for professional audio processing applications	
2	Audio System Delay	< 1ms or better	
3	Digital-Analog Conversion	24-bit or better	
4	Sampling Rate	48KHz or better	
5	Input Channel	16-channel balanced inputs, Mic/line level	
6	Audio Interface	Balanced audio connectors using Phoenix/Euroblock type terminals	
7	Input Impedance	≥10kΩ	
8	Maximum Input Level	12dBu/Line, -7dBu/Mic	
9	Phantom Power	+48VDC, 6.5mA, configured in each channel	
10	Output Channel	16-channel balanced outputs, line level	
11	Output Impedance	≤200Ω	
12	Frequency Response	20Hz-20kHz(+-0.5dB)/Line 20Hz-20kHz(+-1.5dB)/Mic, 20dB Gain	
13	Total harmonic distortion (THD+N)	-90dB (@12dBu,1kHz, A-wt)/Line -86dB (@-7dBu,1kHz, A-wt)/Mic, 20dB Gain	
14	Signal to Noise Ratio	105dB (@12dBu,1kHz, A-wt)/Line 95dB (@-7dBu,1kHz, A-wt)/Mic, 20dB Gain	
15	USB Port	USB interface for configuration and control, drive-free	
16	Serial port communication	1x RS232 Port, 1x RS485, or more	
17	GPIO Port	10 pin GPIO port	
18	TCP/IP Network Port	1x RJ-45 Port or more	
19	Indicator Light	Power, Link, +48V, input and output audio signal	
20	Power Supply	AC100V---240V 50/60 Hz	
21	Input/output requirements	Should have minimum 16 channels audio input & 16 channels audio output should support microphone input and line input with easily switching function	
22	Eco cancelation Mode	Should have AEC echo cancellation and ANC noise cancellation function which should be suitable for Video conferencing requirement.	
23	Level Sensitivity Adjustment	Adjustable microphone input sensitivity	
24	Phantom Power switching	Each input should have 48V phantom power switch	
25	Inbuilt Feedback suspensor	Should Have inbuilt feedback suppressor with two levels adjustment with Each audio input	
26	Audio mixing	Device should have automatic mixing and matrix mixing functions for Audio Signals	
27	PEQ Adjustment	Device should have minimum 16 bands PEQ adjustment for input signal and 10 bands PEQ adjustment for output Signals	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
28	PTZ camera control	Device should support integration with PTZ camera control systems for voice tracking functionality	
29	Warranty	Three years warranty	

Item No. 43: 8-Port Audio Digital Signal Processor with Inbuilt Amplifier and Wireless

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Signal Processing	32-bit DSP processor suitable for professional audio processing	
2	Audio System Delay	≤9ms or better	
3	Digital-Analog Conversion	24-bit or better	
4	Sampling Rate	48KHz or better	
5	Input Channel	8-channel balanced inputs, Mic/line level	
6	Audio Interface	3-Pin Phoenix connector for each input & Output	
7	Input Impedance (balance)	≥10kΩ	
8	Maximum Input Level	18dBu	
9	Phantom Power	+48VDC, configured in each channel	
10	Output Channel	8-channel balanced outputs, line level	
11	Output Impedance	≤200Ω	
12	Maximum Output Level	18dBu	
13	Frequency Response	20Hz-20kHz(+-0.5dB)	
14	Total harmonic distortion (THD+N)	≤0.003%@1kHz,4dBu	
15	Analog to Digital Dynamic Range (A-weight)	120dB	
16	Digital to Analog Dynamic Range (A-weight)	114dB	
17	Signal-to-Noise Ratio	108dB	
18	Digital Amplifier Channels	2 x 150 Watt or better	
19	Wireless Microphone Channels	System should support wireless microphone integration (minimum two microphones to be supplied)	
20	Wireless Microphone	Device should be supplied with One Handheld and One Headband Microphone	
21	USB Port	1x USB interface for integration with video conferencing platforms	
22	Serial port communication	1x RS232 Port, 1x RS485, or more	
23	GPIO Port	8 pin GPIO port	
24	TCP/IP Network Port	1x RJ-45 Port or more	
25	Indicator Light	Power, network, Link, +48V, input and output audio signal	
26	Menu selection button	Rotating button with selection function or better	
27	Power Supply	AC100V---240V 50/60 Hz	
28	Input/output requirements	Should have minimum 8 channels audio input & 8 channels audio output should support microphone input and line input with easily switching function	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
29	Level Sensitivity Adjustment	Adjustable microphone input sensitivity	
30	Phantom Power switching	Each input should have 48V phantom power switch	
31	Audio mixing	Device should have automatic mixing and matrix mixing functions for Audio Signals	
32	Inputs channel functionality	Device should have Preamplifier, Generator, Expander, Compressor, Auto Gain, 5-band parametric EQ for each input channel	
33	Output channel functionality	Device should have delay, crossover, limiter, 31- band graphic EQ for each output channel	
34	PTZ camera control	Device should support integration with PTZ camera systems for voice tracking functionality	
35	Advance Features	Device should have Test signal generator, sine wave, pink noise, white noise, frequency and level magnitude selectable;	
36	Audio Features	Device should have built-in automatic mixing console, including mixing and automatic mixing functions, but also has a mixing component control function; at the same time with AFC, AEC, ANS module	
37	Warranty	Three years warranty	

Item No. 44: 16-Port Audio Digital Signal Processor with Inbuilt Amplifier and Wireless

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Signal Processing	32-bit DSP processor suitable for professional audio processing	
2	Audio System Delay	≤9ms or better	
3	Digital-Analog Conversion	24-bit or better	
4	Sampling Rate	48KHz or better	
5	Input Channel	16-channel audio inputs, Mic/line level	
6	Audio Interface	3-Pin Phoenix connector for each input & Output	
7	Input Impedance (balance)	≥10kΩ	
8	Maximum Input Level	18dBu	
9	Phantom Power	+48VDC, configured in each channel	
10	Output Channel	16-channel audio outputs, line level	
11	Output Impedance	≤200Ω	
12	Maximum Output Level	18dBu	
13	Frequency Response	20Hz-20kHz(+-0.5dB)	
14	Total harmonic distortion (THD+N)	≤0.003%@1kHz,4dBu	
15	Analog to Digital Dynamic Range (A-weight)	120dB	
16	Digital to Analog Dynamic Range (A-weight)	114dB	
17	Signal-to-Noise Ratio	108dB	
18	Digital Amplifier Channels	2 x 150 Watt or better	
19	Wireless Microphone Channels	System should support wireless microphone integration. Minimum one handheld and one headband microphone should be supplied	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
20	Wireless Microphone	Device should be supplied with One Handheld and One Headband Microphone	
21	USB Port	1x USB interface for integration with video conferencing platforms	
22	Serial port communication	1x RS232 Port, 1x RS485, or more	
23	GPIO Port	8 pin GPIO port	
24	TCP/IP Network Port	1x RJ-45 Port or more	
25	Indicator Light	Power, network, Link, +48V, input and output audio signal	
26	Menu selection button	Rotating button with selection function or better	
27	Power Supply	AC100V---240V 50/60 Hz	
28	Input/output requirements	Should have minimum 8 channels audio input & 8 channels audio output should support microphone input and line input with easily switching function	
29	Level Sensitivity Adjustment	Adjustable microphone input sensitivity	
30	Phantom Power switching	Each input should have 48V phantom power switch	
31	Audio mixing	Device should have automatic mixing and matrix mixing functions for Audio Signals	
32	Inputs channel functionality	Device should have Preamplifier, Generator, Expander, Compressor, Auto Gain, 5-band parametric EQ for each input channel	
33	Output channel functionality	Device should have delay, crossover, limiter, 31-band graphic EQ for each output channel	
34	PTZ camera control	Device should support PTZ camera Control to functionate voice tracking functionality	
35	Advance Features	Device should have Test signal generator, sinewave, pink noise, white noise, frequency and level magnitude selectable;	
36	Audio Features	Device should have built-in automatic mixing console, including mixing and automatic mixing functions, but also has a mixing component control function; at the same time with AFC, AEC, ANS module	
37	Warranty	Three years warranty	

Item No. 45: Information Kiosk with Integrated Camera

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Type/Mounting	Pedestal	
2	Construction base	The enclosure shall be of minimum 1.6 mm thick CRCA Steel, polymer powder coated designed to work in harsh conditions. The design shall be vandal resistant. Design must be sleek and attractive.	
3	Display Type:	Display with anti-glare toughened glass	
4	Display Size	21 inch or higher	
5	Panel Type	IPS Technology	
6	Active area(mm)	Active display area suitable for 21-inch or higher display	
7	Resolution	1920 x 1080 Full HD or better	
8	Light Source	LED	
9	Brightness	350 cd/m² or higher	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
10	Contrast Ratio	1200:1 or higher	
11	Colours	16.7M or better	
12	Aspect Ratio	16:09	
13	Response Time (Typical GTG)	8ms or better	
14	Operational Hours	30000 Hours or higher	
15	Viewing Angles	178º horizontal, 178º vertical	
16	Curvature	Flat	
17	Colour Gamut	72% or better	
18	Interactive Method	Pen-based interactive technology (EMR / Active Pen / equivalent)	
19	Touch Type	Pressure-sensitive, cordless, battery-free	
20	Resolution	High precision pen input with pressure sensitivity	
21	Pressure levels	and accurate tracking suitable for writing/drawing	
22	Tracking speed	applications	
23	Touch Accuracy	±0.5mm(center); ±1mm(edge)	
24	Touch Response	First touch:30ms; Continuous touch:5ms	
25	Touch Screen	Multi-touch Points	
26	Control Buttons	Power, Menu, +/-, Auto or more	
27	Connectivity (Minimum)	USB x 1, HDMIx 1, DVI x 1, VGA x 1 or better	
28	Pen Type	Battery Free EM Pen	
29	Pen Control	Two Key and Pen tip Control	
31	Power Supply	12V DC	
32	System Details:		
33	Form Factor	Small form factor industrial mini-PC	
34	CPU	Intel Core i5 (10 th Gen or better processor)	
35	RAM	8 GB RAM	
36	Storage	256 GB SSD or better	
37	In-Built Wi-Fi / Wireless LAN Card	Should have an inbuilt Wi-Fi / Wireless LAN Card	
38	Ports (Minimum)	HDMI/DP x 2, USB ports x 4, LAN Port x 1	
39	Keyboard & Mouse	Metal keyboard with track ball	
40	Operating System	Windows 10 or better	
41	Certification	Valid BIS registration for applicable electronic components (Mini PC / Webcam / Display) to be submitted	
42	Biometric fingerprint Reader	Solution should be supplied with Biometric fingerprint Reader	
43	Power Back up	Solution should be supplied with minimum 1 KVA offline UPS with inbuilt batteries with minimum 15-20 Minutes backup time.	
44	Camera		
45	Full HD Webcam	Solution should be supplied with Full HD Webcam with 78-degree FoV and dual inbuilt mic, USB Plug & Play output, BIS Certificate required for webcam	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
46	Warranty	Three years warranty	

Item No 46: English Language Lab Software Solution

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Hybrid Learning Mode	Language Lab Solution should have provision of Hybrid Learning mode so that it can be accessed within classroom or outside the campus using internet.	
2	Intercom	Two-way intercom communication between Teacher & student. The communication should be through text, audio & Video.	
3	Broadcast	Provision for teacher to broadcast text message to one student or to a group of selected students.	
4	Audio Supervision	Provision for teacher to listen to any students recording & check their progress.	
5	Chat	Provision for teacher to send alerts to student through Text Chat.	
6	Assignments	Provision for Teacher to create assignments & broadcast to the class. Provision should be there to assign same/separate tasks to different group of students. There should also be provision to assign task to students with a start and expiry date.	
7	Reports & Analysis	The Teacher's Dashboard should have the following features: Details about all the classes assigned to the teachers, Students performance report both in text as well as Graphical for various tasks assigned to carious classes. Provision for generating various reports to check & analyse progress of students. The language lab software should automatically generate reports giving details about each individual learner's activities performed, time spent on each such activity on a day-to-day basis. Each student's individual report should be available to the student as well as the teacher. The language lab software should also have reports that shows the usage of the software by each of the instructor/faculty/teacher. They should also be able to listen to the recorded exercises of the students. Teacher should be able to give remarks to students on their audio recorded exercises both in text & audio formats. A centralized report should be available to the Administrators/Governing Bodies on the usage of content by both the instructors and students for all the language lab software licenses procured under this project. This should be web based and available to various stakeholders of the project. Provide Management with password protected login, should have the option to view the reports of both teachers and students.	
8	AV Lessons	Provision for teacher to create personal audio video lesson contents. Provision for teacher to assign the pre-recorded lesson for future dates.	
9	E-exam	Paperless e-exam with automatic submission of answer sheets on completion of timelines.	
10	Audio modulation	Provision to automatically generate graphical representation on the recorded audio of the learner as against the originals for self-assessment and evaluation.	
11	Accent	The entire teaching - learning content should be in neutral accent.	
12	Secured Login	The Language Lab Software should have password protected login interface of teacher & students to enable a secure encrypted session with SSL Security to provide secure access of platform	
13	Management Login	Provide Management with password protected login and view various reports of centres, users, teacher , students, proctoring and graphical reports	
14	E-Books	The teacher should be able to upload PDF files (e-books) for the students to read and able to provide writing assignments to the students.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
15	External Media	Solution should have provision for teacher to use any external storage device (USB, CD/DVD) to play or display the content files.	
16	OS & Hardware Support	The Software should support on Windows, Linux, & Android. The software should seamlessly work on Desktop/Tablets	
17	Mobile Apps	Software access: The language-lab solution shall provide Android and/or iOS application access, a responsive web portal/web application, or an equivalent cross-platform interface supporting the required learner and administrator functions. It shall support current mainstream browsers/devices and include all licences for the contract period.	
18	English Multimedia Content Learning Levels	The Language Lab Software should take into account the following features: - It should enhance the Communicative English skills of the students and have multiple level of learning ranging from Entrant, Competent & Proficient with substantial content to hone the learner skills. The content should be as per the Common European Framework of Reference (CEFR). Content should purely be multimedia based and comprise of graphics, audio, video and should be highly interactive in nature.	
19		The Language Lab Software should have content for strengthening all the four language skills: - Listening , Speaking, Reading & Writing (LSRW). It should have model Imitation that should facilitate the student to listen to the exact pronunciation of a word and then record one's own and then compare both of them, thereby helping the student to recognize the error and amend the differences. The software should have capabilities of Listening, Recording and Comparing of Speech patterns both via audio and visual. The software should have speech spectrograph for graphical visualization. The software should be based on neutral (Indian) accent and should not use foreign accent. It should have jaw and tongue movement animations for all the sounds to facilitate learning of proper articulation of sounds.	
20		The Language Lab Software should consist of a glossary of words with correct pronunciation in the Indian context. The English language lab software should have components to work on Intonation, Word stress & Syllables. The English language lab software should cater to the basics of English grammar using animated situations and related practice exercises. It should be user friendly so that faculty can take classes with minimal of technical knowledge.	
21	Teaching Pedagogy (Methodology)	The English language lab software should have the following features for proper teaching – learning of English language skills by both the faculty and the students. It should be based on the 'Blended Learning' mechanism, i.e. It should have Instructor Lead Teaching (ILT/ Classroom teaching) content as well as Computer Based Training (CBT/Lab practice) content. The software should have predefined lesson plans with detailed breakup of each session of approximately 30 minutes each. The Instructor/ Faculty / Teacher should be able to create tasks for students to perform in the language lab at a later time which can be pre- defined. The Instructor / Faculty / Teacher should have the option to assign the same task to all the students and/or different tasks to different students of the same batch.	
22	Vocabulary	The English language lab software should have a different section of Vocabulary with phonetics, meaning, usage of the word, which can also be referred as Glossary Of words. A provision of listening the expert voice and recording one's voice following by a Self Evaluation or a Manual Evaluation	
23	MTI Tool	Language lab software should have MTI Tool in each module	
24	Visual Jaw Movements	Language lab software should have Visual Jaw Movements in each module	
25	Idioms/Phrases	The Language Lab Software should have features like Homophone, Synonym, Antonym etc. are practiced in each chapter in Web Based Training (WBT), Idioms and Phrases shall be included in the chapters	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
26	Grammar	Grammar topics should also given proper stress in each chapter	
27	Learning Flow	Should have Concept Video + Moral Story/Poems in each chapter introducing the topics in a fun way	
28	Social & Moral Learnings	Syllabus should designed in context of social and moral learnings for the initial classes - with last page of each chapter dedicatedly showing the outcomes.	
29	Gamification & Roleplay	Game page in Web Based Training (WBT) provides leaning with a video game feel along with the virtual roleplay	
30	Advance Content	Should have Separate Modules for Creative Writing, Calligraphy, IELTS, TOFL, Soft skills, Applied Grammar, Reading skills, Linguistics	
31	Sounds	The language software should provide proper articulation for all 44 sounds of English using animation.	
32	MTI	Should have a Mother Tongue Influence (MTI) removal tool	
33	Self-Assessment	Provision for self-assessment & send the exercise to teacher for evaluation at conclusion of every module / lesson plan.	
34	Pronunciation	Provide sample lessons, words, pronunciation sounds, videos, comparison & assessment tools for proficiency in English pronunciation.	
35	Comprehension	Provide lesson plan with focus on expressions, situational dialogues, comprehension, exercises with comparisons & assessment.	
36	Resource Material & Training	Training should be imparted for one day (6 hours) and training modules should include: - • Training on usage of all the features of the language lab software • Training on the various aspects of language on its teaching pedagogy Proper detailed trainer manuals to be provided for each level on the delivery mechanism. It should be in depth with minute-to-minute description of the teaching procedures. Classroom reference material in the form of Flash/ Cue Cards too should be made available for each session. In depth trainer videos should be made available in the software for the teacher to refer to. Students reference material / workbooks in accordance to the software should be made available.	
37	Student Material	Students material in the form work books for each level should be available. This material should be integrated with the content.	
38	Pre Recorded media	Provide Audio / Video recorded files from Poetry Masters, Writers, Speeches, Lectures, Documentary, Movies, News, etc. to improve comprehension of language.	
39	Licensed User Terminals	License to be provided for 20+1 terminals (Students & Teacher both included) with a validity of three years.	
40	Warranty	Three years warranty	

Item No 47: English, Hindi & Sanskrit Language Lab Software Solution

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Hybrid Learning Mode	Language Lab Solution should have provision of Hybrid Learning mode so that it can be accessed within classroom or outside the campus using internet.	
2	Intercom	Two-way intercom communication between Teacher & student. The communication should be through text, audio & Video.	
3	Broadcast	Provision for teacher to broadcast text message to one student or to a group of selected students.	
4	Audio Supervision	Provision for teacher to listen to any students recording & check their progress.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
5	Chat	Provision for teacher to send alerts to student through Text Chat.	
6	Assignments	Provision for Teacher to create assignments & broadcast to the class. Provision should be there to assign same/separate tasks to different group of students. There should also be provision to assign task to students with a start and expiry date.	
7	Reports & Analysis	The Teacher's Dashboard should have the following features: Details about all the classes assigned to the teachers, Students performance report both in text as well as Graphical for various tasks assigned to carious classes. Provision for generating various reports to check & analyse progress of students. The language lab software should automatically generate reports giving details about each individual learner's activities performed, time spent on each such activity on a day-to-day basis. Each students individual report should be available to the student as well as the teacher. The language lab software should also have reports that shows the usage of the software by each of the instructor/faculty/teacher. They should also be able to listen to the recorded exercises of the students. Teacher should be able to give remarks to students on their audio recorded exercises both in text & audio formats. A centralized report should be available to the Administrators/Governing Bodies on the usage of content by both the instructors and students for all the language lab software licenses procured under this project. This should be web based and available to various stakeholders of the project. Provide Management with password protected login, should have the option to view the reports of both teachers and students.	
8	AV Lessons	Provision for teacher to create personal audio video lesson contents. Provision for teacher to assign the pre- recorded lesson for future dates.	
9	E-exam	Paperless e-exam with automatic submission of answer sheets on completion of timelines.	
10	Audio modulation	Provision to automatically generate graphical representation on the recorded audio of the learner as against the originals for self-assessment and evaluation.	
11	Accent	The entire teaching - learning content should be in neutral accent.	
12	Secured Login	The Language Lab Software should have password protected login interface of teacher & students to enable a secure encrypted session with SSL Security to provide secure access of platform	
13	Management Login	Provide Management with password protected login and view various reports of centres, users, teacher, students, proctoring and graphical reports	
14	E-Books	The teacher should be able to upload PDF files (e-books) for the students to read and able to provide writing assignments to the students.	
15	External Media	Solution should have provision for teacher to use any external storage device (USB, CD/DVD) to play or display the content files.	
16	OS & Hardware Support	The Software should support on Windows, Linux, & Android. The software should seamlessly work on Desktop/Tablets	
17	Mobile Apps	Software access: The language-lab solution shall provide Android and/or iOS application access, a responsive web portal/web application, or an equivalent cross-platform interface supporting the required learner and administrator functions. It shall support current mainstream browsers/devices and include all licences for the contract period.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
18	English Multimedia Content Learning Levels	The Language Lab Software should take into account the following features: - It should enhance the Communicative English skills of the students and have multiple level of learning ranging from Entrant, Competent & Proficient with substantial content to hone the learner skills. The content should be as per the Common European Framework of Reference (CEFR). Content should purely be multimedia based and comprise of graphics, audio, video and should be highly interactive in nature.	
19		The Language Lab Software should have content for strengthening all the four language skills: - Listening , Speaking, Reading & Writing (LSRW). It should have model Imitation that should facilitate the student to listen to the exact pronunciation of a word and then record one's own and then compare both of them, thereby helping the student to recognize the error and amend the differences. The software should have capabilities of Listening, Recording and Comparing of Speech patterns both via audio and visual. The software should have speech spectrograph for graphical visualization. The software should be based on neutral (Indian) accent and should not use foreign accent. It should have jaw and tongue movement animations for all the sounds to facilitate learning of proper articulation of sounds.	
20		The Language Lab Software should consist of a glossary of words with correct pronunciation in the Indian context. The English language lab software should have components to work on Intonation, Word stress & Syllables. The English language lab software should cater to the basics of English grammar using animated situations and related practice exercises. It should be user friendly so that faculty can take classes with minimal of technical knowledge.	
21	Teaching Pedagogy (Methodology)	The English language lab software should have the following features for proper teaching – learning of English language skills by both the faculty and the students. It should be based on the 'Blended Learning' mechanism, i.e. It should have Instructor Lead Teaching (ILT/ Classroom teaching) content as well as Computer Based Training (CBT/Lab practice) content. The software should have predefined lesson plans with detailed breakup of each session of approximately 30 minutes each. The Instructor/ Faculty / Teacher should be able to create tasks for students to perform in the language lab at a later time which can be pre-defined. The Instructor / Faculty / Teacher should have the option to assign the same task to all the students and/or different tasks to different students of the same batch.	
22	Vocabulary	The English language lab software should have a different section of Vocabulary with phonetics, meaning, usage of the word, which can also be referred as Glossary Of words. A provision of listening the expert voice and recording one's voice following by a Self- Evaluation or a Manual Evaluation	
23	MTI Tool	Language lab software should have MTI Tool in each module	
24	Visual Jaw Movements	Language lab software should have Visual Jaw Movements in each module	
25	Idioms/Phrases	The Language Lab Software should have features like Homophone, Synonym, Antonym etc. are practiced in each chapter in Web Based Training (WBT), Idioms and Phrases shall be included in the chapters	
26	Grammar	Grammar topics should also given proper stress in each chapter	
27	Learning Flow	Should have Concept Video + Moral Story/Poems in each chapter introducing the topics in a fun way	
28	Social & Moral Learnings	Syllabus should designed in context of social and moral learnings for the initial classes - with last page of each chapter dedicatedly showing the outcomes.	
29	Gamification & Roleplay	Game page in Web Based Training (WBT) provides leaning with a video game feel along with the virtual roleplay	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
30	Advance Content	Should have Separate Modules for Creative Writing, Calligraphy, IELTS, TOFL, Soft skills, Applied Grammar, Reading skills, Linguistics	
31	Sounds	The language software should provide proper articulation for all 44 sounds of English using animation.	
32	MTI	Should have a Mother Tongue Influence (MTI) removal tool	
33	Self-Assessment	Provision for self-assessment & send the exercise to teacher for evaluation at conclusion of every module / lesson plan.	
34	Pronunciation	Provide sample lessons, words, pronunciation sounds, videos, comparison & assessment tools for proficiency in English pronunciation.	
35	Comprehension	Provide lesson plan with focus on expressions, situational dialogues, comprehension, exercises with comparisons & assessment.	
36	Resource Material & Training	Training should be imparted for one day (6 hours) and training modules should include: - • Training on usage of all the features of the language lab software • Training on the various aspects of language on its teaching pedagogy Proper detailed trainer manuals to be provided for each level on the delivery mechanism. It should be in depth with minute to minute description of the teaching procedures. Classroom reference material in the form of Flash/ Cue Cards too should be made available for each session. In depth trainer videos should be made available in the software for the teacher to refer to. Students reference material / workbooks in accordance to the software should be made available.	
37	Student Material	Students material in the form work books for each level should be available. This material should be integrated with the content.	
38	Pre Recorded media	Provide Audio / Video recorded files from Poetry Masters, Writers, Speeches, Lectures, Documentary, Movies, News, etc. to improve comprehension of language.	
39	Hindi Multimedia Content	Multimedia content covering Hindi Vowels and Consonants, Combination of letters, Commonly used Words, Greetings, etc.	
40	Hindi through English	Content for learning Hindi Alphabets, Pronunciation, Anuswara & Nasalization, Accent, Pronouns & Nouns, Adjectives & Verbs, Tenses, Adverbs, Conjunctions, Voice & Construction, Order of Words, Standard Devanagari Script, Standardisation of Hindi Spelling	
41	Hindi Literature	Content with reference to Hindi literature, poetry, poems, etc.	
42	Hindi Grammar	Content for covering all components of Hindi grammar like: Alankar, Chand, Pad Parichay, Vachay, Idioms, Synonyms, etc.	
43	Picture Gallery	Multimedia gallery in Hindi for relating to day to day things like: Animals, Body Parts, Colours, Communications, Costumes, Festivals, Musical Instruments, Professionals, Relations, Trees, Universe, etc.	
44	Knowledge bank on Indian Culture & Heritage	Knowledge bank having details on Indian culture & heritage, sharing knowledge about: Indian Geography, Economy, Vedas, Upanishad, Ramayana, Mahabharata, Shrimad Bhagavata Geeta, other Literatures, Dance, Music, Ayurveda, Yoga, Spirituality, Food, etc.	
45	Sanskrit language content concept	Software to help in learning Sanskrit from basics and go on to making simple sentences. Introduction to concepts, skills and a section to self - assess your learning. Self- paced, activity-based learning software, contains 250+ activities.	
46	Vocabulary Builder	Provide flash card based learning Should have multiple categories with 200+ words and synonyms. Categories should include Sanskrit words for Gods, Animals, Birds, Fruits, Vegetables, Parts of the body, Colours, Food, Relations, Professions, Emotions, Public Places, Sports, Grains, Computer, Musical Instruments, Time, Natural Occurrences and many more. Provide Brain Games for exercising Sanskrit.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
47	Sanskrit Language Lesson Plan	Lesson plan covering noun forms, 200+ Sanskrit words, Learning mode and the Practice mode. Covering Sanskrit Sandhis through animations, charts, tables, interactive exercises, examples and games. Practice the language skills (LSRW) Build your Vocabulary for using the language. Master your communication skills. Build and Re-inforce Foundation in grammar. Apply Language skills + Grammar through simple text and for school.	
48	Licensed User Terminals	License to be provided for 20+1 terminals (Students & Teacher both included) with a validity of three years.	
49	Warranty	Three years warranty	

Item No 48: English, Hindi, Sanskrit, French & Spanish Language Lab Software Solution

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Hybrid Learning Mode	Language Lab Solution should have provision of Hybrid Learning mode so that it can be accessed within classroom or outside the campus using internet.	
2	Intercom	Two-way intercom communication between Teacher & student. The communication should be through text, audio & Video.	
3	Broadcast	Provision for teacher to broadcast text message to one student or to a group of selected students.	
4	Audio Supervision	Provision for teacher to listen to any students recording & check their progress.	
5	Chat	Provision for teacher to send alerts to student through Text Chat.	
6	Assignments	Provision for Teacher to create assignments & broadcast to the class. Provision should be there to assign same/separate tasks to different group of students. There should also be provision to assign task to students with a start and expiry date.	
7	Reports & Analysis	The Teacher's Dashboard should have the following features: Details about all the classes assigned to the teachers, Students performance report both in text as well as Graphical for various tasks assigned to carious classes. Provision for generating various reports to check & analyse progress of students. The language lab software should automatically generate reports giving details about each individual learner's activities performed, time spent on each such activity on a day- to-day basis. Each student's individual report should be available to the student as well as the teacher. The language lab software should also have reports that shows the usage of the software by each of the instructor/faculty/teacher. They should also be able to listen to the recorded exercises of the students. Teacher should be able to give remarks to students on their audio recorded exercises both in text & audio formats. A centralized report should be available to the Administrators/Governing Bodies on the usage of content by both the instructors and students for all the language lab software licenses procured under this project. This should be web based and available to various stakeholders of the project. Provide Management with password protected login, should have the option to view the reports of both teachers and students.	
8	AV Lessons	Provision for teacher to create personal audio video lesson contents. Provision for teacher to assign the pre- recorded lesson for future dates.	
9	E-exam	Paperless e-exam with automatic submission of answer sheets on completion of timelines.	
10	Audio modulation	Provision to automatically generate graphical representation on the recorded audio of the learner as against the originals for self-assessment and evaluation.	
11	Accent	The entire teaching - learning content should be in neutral accent.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
12	Secured Login	The Language Lab Software should have password protected login interface of teacher & students to enable a secure encrypted session with SSL Security to provide secure access of platform	
13	Management Login	Provide Management with password protected login and view various reports of centres, users, teacher, students, proctoring and graphical reports	
14	E-Books	The teacher should be able to upload PDF files (e- books) for the students to read and able to provide writing assignments to the students.	
15	External Media	Solution should have provision for teacher to use any external storage device (USB, CD/DVD) to play or display the content files.	
16	OS & Hardware Support	The Software should support on Windows, Linux, & Android. The software should seamlessly work on Desktop/Tablets	
17	Mobile Apps	Software access: The language-lab solution shall provide Android and/or iOS application access, a responsive web portal/web application, or an equivalent cross-platform interface supporting the required learner and administrator functions. It shall support current mainstream browsers/devices and include all licences for the contract period.	
18	English Multimedia Content Learning Levels	The Language Lab Software should take into account the following features: - It should enhance the Communicative English skills of the students and have multiple level of learning ranging from Entrant, Competent & Proficient with substantial content to hone the learner skills. The content should be as per the Common European Framework of Reference (CEFR). Content should purely be multimedia based and comprise of graphics, audio, video and should be highly interactive in nature.	
19		The Language Lab Software should have content for strengthening all the four language skills: - Listening, Speaking, Reading & Writing (LSRW). It should have model Imitation that should facilitate the student to listen to the exact pronunciation of a word and then record one's own and then compare both of them, thereby helping the student to recognize the error and amend the differences. The software should have capabilities of Listening, Recording and Comparing of Speech patterns both via audio and visual. The software should have speech spectrograph for graphical visualization. The software should be based on neutral (Indian) accent and should not use foreign accent. It should have jaw and tongue movement animations for all the sounds to facilitate learning of proper articulation of sounds.	
20		The Language Lab Software should consist of a glossary of words with correct pronunciation in the Indian context. The English language lab software should have components to work on Intonation, Word stress & Syllables. The English language lab software should cater to the basics of English grammar using animated situations and related practice exercises. It should be user friendly so that faculty can take classes with minimal of technical knowledge.	
21	Teaching Pedagogy (Methodology)	The English language lab software should have the following features for proper teaching – learning of English language skills by both the faculty and the students. It should be based on the 'Blended Learning' mechanism, i.e. It should have Instructor Lead Teaching (ILT/ Classroom teaching) content as well as Computer Based Training (CBT/Lab practice) content. The software should have predefined lesson plans with detailed breakup of each session of approximately 30 minutes each. The Instructor/ Faculty / Teacher should be able to create tasks for students to perform in the language lab at a later time which can be pre-defined. The Instructor / Faculty / Teacher should have the option to assign the same task to all the students and/or different tasks to different students of the same batch.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
22	Vocabulary	The English language lab software should have a different section of Vocabulary with phonetics, meaning, usage of the word, which can also be referred as Glossary Of words. A provision of listening the expert voice and recording one's voice following by a Self Evaluation or a Manual Evaluation	
23	MTI Tool	Language lab software should have MTI Tool in each module	
24	Visual Jaw Movements	Language lab software should have Visual Jaw Movements in each module	
25	Idioms/Phrases	The Language Lab Software should have features like Homophone, Synonym, Antonym etc. are practiced in each chapter in Web Based Training (WBT), Idioms and Phrases shall be included in the chapters	
26	Grammar	Grammar topics should also given proper stress in each chapter	
27	Learning Flow	Should have Concept Video + Moral Story/Poems in each chapter introducing the topics in a fun way	
28	Social & Moral Learnings	Syllabus should designed in context of social and moral learnings for the initial classes - with last page of each chapter dedicatedly showing the outcomes.	
29	Gamification & Roleplay	Game page in Web Based Training (WBT) provides leaning with a video game feel along with the virtual roleplay	
30	Advance Content	Should have Separate Modules for Creative Writing, Calligraphy, IELTS, TOFL, Soft skills, Applied Grammar, Reading skills, Linguistics	
31	Sounds	The language software should provide proper articulation for all 44 sounds of English using animation.	
32	MTI	Should have a Mother Tongue Influence (MTI) removal tool	
33	Self-Assessment	Provision for self-assessment & send the exercise to teacher for evaluation at conclusion of every module / lesson plan.	
34	Pronunciation	Provide sample lessons, words, pronunciation sounds, videos, comparison & assessment tools for proficiency in English pronunciation.	
35	Comprehension	Provide lesson plan with focus on expressions, situational dialogues, comprehension, exercises with comparisons & assessment.	
36	Resource Material & Training	Training should be imparted for one day (6 hours) and training modules should include: - • Training on usage of all the features of the language lab software • Training on the various aspects of language on its teaching pedagogy Proper detailed trainer manuals to be provided for each level on the delivery mechanism. It should be in depth with minute-to-minute description of the teaching procedures. Classroom reference material in the form of Flash/ Cue Cards too should be made available for each session. In depth trainer videos should be made available in the software for the teacher to refer to. Students reference material / workbooks in accordance to the software should be made available.	
37	Student Material	Students material in the form work books for each level should be available. This material should be integrated with the content.	
38	Pre Recorded media	Provide Audio / Video recorded files from Poetry Masters, Writers, Speeches, Lectures, Documentary, Movies, News, etc. to improve comprehension of language.	
39	Hindi Multimedia Content	Multimedia content covering Hindi Vowels and Consonants, Combination of letters, commonly used Words, Greetings, etc.	
40	Hindi through English	Content for learning Hindi Alphabets, Pronunciation, Anuswara & Nasalization, Accent, Pronouns & Nouns, Adjectives & Verbs, Tenses, Adverbs, Conjunctions, Voice & Construction, Order of Words, Standard Devanagari Script, Standardisation of Hindi Spelling	
41	Hindi Literature	Content with reference to Hindi literature, poetry, poems, etc.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
42	Hindi Grammar	Content for covering all components of Hindi grammar like: Alankar, Chand, Pad Parichay, Vachay, Idioms, Synonyms, etc.	
43	Picture Gallery	Multimedia gallery in Hindi for relating to day to day things like: Animals, Body Parts, Colours, Communications, Costumes, Festivals, Musical Instruments, Professionals, Relations, Trees, Universe, etc.	
44	Knowledge bank on Indian Culture & Heritage	Knowledge bank having details on Indian culture & heritage, sharing knowledge about: Indian Geography, Economy, Vedas, Upanishad, Ramayana, Mahabharata, Shrimad Bhagavata Geeta, other Literatures, Dance, Music, Ayurveda, Yoga, Spirituality, Food, etc.	
45	Sanskrit language content concept	Software to help in learning Sanskrit from basics and go on to making simple sentences. Introduction to concepts, skills and a section to self - assess your learning. Self-paced, activity based learning software, contains 250+ activities.	
46	Vocabulary Builder	Provide flash card based learning Should have multiple categories with 200+ words and synonyms. Categories should include Sanskrit words for Gods, Animals, Birds, Fruits, Vegetables, Parts of the body, Colours, Food, Relations, Professions, Emotions, Public Places, Sports, Grains, Computer, Musical Instruments, Time, Natural Occurrences and many more. Provide Brain Games for exercising Sanskrit.	
47	Sanskrit Language Lesson Plan	Lesson plan covering noun forms, 200+ Sanskrit words, Learning mode and the Practice mode. Covering Sanskrit Sandhis through animations, charts, tables, interactive exercises, examples and games. Practice the language skills (LSRW) Build your Vocabulary for using the language. Master your communication skills. Build and Re-inforce Foundation in grammar. Apply Language skills + Grammar through simple text and for school.	
48	Integration of Foreign Language	Platform should be capable to integrate Foreign Language like Spanish & French with its modules & content if required in future with additional licencing cost.	
49	Licensed User Terminals	License to be provided for 20+1 terminals (Students & Teacher both included) with a validity of three years.	
50	Warranty	Three years warranty	

Item No 49: Student Response System (25 +1 Clicker Set)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Student's Clicker		
2	RFID Module	Wireless RF communication operating in 2.4 GHz band	
3	Power Function	Power button for Power ON/OFF	
4	Response Function	0-9, A-F, Yes/No Input and automatic switching	
5	Material	ABS with Polycarbonate	
6	Display	ID, Signal Intensity, Battery, Operation Instructions	
7	Backup	More than 60,000 of Answering or up to 12 months or more	
8	Communication Range	Up to 100 meters or more	
9	No. of clickers	25	
10	Teacher's Clicker		
11	Material	ABS+ Polycarbonate	
12	Response function	Page up/down, A-D, OK	
13	Display	ID, Signal Intensity, Battery, Operation Instructions	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
14	RFID Module	2.4 GHz	
15	Communication Distance	Minimum 30 meters or better	
16	Next and Back Question change Support	Yes	
17	Lifeline Option Support	Yes	
18	Question Start and End Support	Yes	
19	No. of Clickers	1	
20	Wireless Receiver Module		
21	RFID Module	2.4 GHz	
22	Antenna	Dual Omnidirectional External Antenna	
23	Indicator Light	Red and Green indicator Lights	
24	Wireless Range	Minimum 30 meters or more	
25	Material	ABS	
26	Data Interface	USB Type B	
27	Power	USB Power supply	
28	Required Operational features	Below mentioned features should be operational with android 7, 8, 9, 10, 11 & latest android version as available in Interactive panel	
29		SRS software should support integration with commonly used presentation and office applications	
30		User should be able to upload excel sheet for large no. users binding/ pairing at once	
31		SRS should support configurable binding/ unbinding of keypads as per user with Participants ID and name	
32		System should support quick pairing of clickers with users	
33		System should support Offline only Mode	
34		User should be able to Add/ Edit/ Delete Questions	
35	General Features	System should support Single Choice and Multiple-Choice Questions	
36		System should support Yes/No Questions	
37		System should support Audience Polling (Yes/ No)	
38		SRS should support Voting Response	
39		SRS should Support Lifeline Response features	
40		System should support scoring feature	
41		Present controlled participation Time	
42		Support quiz in Pdf/slide-show related software's	
43		Fastest responder with correct Answer	
44		Negative marking for questions	
45		Option to set time, options and marks for each question	
46		Report generation within software	
47		System should automatically shows the winner podium with their names and download image option	
48		System should have provision to set count down time	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
49		System should have provision to change question automatically once every users submitted their answers	
50		System should have provision to control quiz via teachers clicker	
51		System should have provision to set the delay time of Question start in seconds	
52		System should have provision of class management	
53		System should have provision of Student management	
54		SRS should have option of automatic attendance marking	
55		System should have provision to start quiz from current and beginning slide	
56		Dashboard should have provision of Total user, Voted and Not voted user	
57		System should have provision to display the name of users, those who have submitted their answers	
58		System should have provision to switch between 2D and 3D graph	
59		Report question-wise	
60		Report Overall-wise	
61		Report Summary in the form of statistics	
62		Report Availability on Bar-chart format	
63		Report Availability in Pie- chart format	
64		Report Availability with Student attendance	
65		Report Availability in percentage format	
66		Report Availability in Numeric format	
67		Report Availability of Attendance	
68		Reports should be professional with proper cover page, correct answer, graph, timing and ranking	
69		Report availability in excel and pdf format	
70	Compatibility	Hardware and software should be fully compatible and supplied as an integrated solution	
71	Warranty	Three years warranty	

Item No 50: Student Response System (50 +1 Clicker Set)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Student's Clicker		
2	RFID Module	Wireless RF communication operating in 2.4GHz band	
3	Power Function	Power button for Power ON/OFF	
4	Response Function	0-9, A-F, Yes/No Input and automatic switching	
5	Material	ABS with Polycarbonate	
6	Display	ID, Signal Intensity, Battery, Operation Instructions	
7	Backup	More than 60,000 of Answering or up to 12 months or more	
8	Communication Range	Up to 100 meters or more	
9	No. of clickers	50	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
10	Teacher's Clicker		
11	Material	ABS+ Polycarbonate	
12	Response function	Page up/down, A-D, OK	
13	Display	ID, Signal Intensity, Battery, Operation Instructions	
14	RFID Module	2.4 GHz	
15	Communication Distance	Minimum 30 meters or better	
16	Next and Back Question change Support	Yes	
17	Lifeline Option Support	Yes	
18	Question Start and End Support	Yes	
19	No. of Clickers	1	
20	Wireless Receiver Module		
21	RFID Module	2.4 GHz	
22	Antenna	Dual Omnidirectional External Antenna	
23	Indicator Light	Red and Green indicator Lights	
24	Wireless Range	Minimum 30 meters or more	
25	Material	ABS	
26	Data Interface	USB Type B	
27	Power	USB Power supply	
28	Required Operational features	Below mentioned features should be operational with android 7, 8, 9, 10, 11 & latest android version as available in Interactive panel	
29		SRS software should support integration with commonly used presentation and office applications	
30		User should be able to upload excel sheet for large no. users binding/ pairing at once	
31		SRS should support configurable binding/ unbinding of keypads as per user with Participants ID and name	
32	General Features	System should support quick and easy pairing of clickers with users	
33		System should support Offline only Mode	
34		User should be able to Add/ Edit/ Delete Questions	
35		System should support Single Choice and Multiple Choice Questions	
36		System should support Yes/No Questions	
37		System should support Audience Polling (Yes/ No)	
38		SRS should support Voting Response	
39		SRS should Support Lifeline Response features	
40		System should support scoring feature	
41		Present controlled participation Time	
42		Support quiz in Pdf/slide-show related software's	
43		Fastest responder with correct Answer	
44		Negative marking for questions	
45		Option to set time, options and marks for each question	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
46		Report generation within software	
47		System should automatically shows the winner podium with their names and download image option	
48		System should have provision to set count down time	
49		System should have provision to change question automatically once every users submitted their answers	
50		System should have provision to control quiz via teachers clicker	
51		System should have provision to set the delay time of Question start in seconds	
52		System should have provision of class management	
53		System should have provision of Student management	
54		SRS should have option of automatic attendance marking	
55		System should have provision to start quiz from current and beginning slide	
56		Dashboard should have provision of Total user, Voted and Not voted user	
57		System should have provision to display the name of users, those who have submitted their answers	
58		System should have provision to switch between 2D and 3D graph	
59		Report question-wise	
60		Report Overall-wise	
61		Report Summary in the form of statistics	
62		Report Availability on Bar-chart format	
63		Report Availability in Pie- chart format	
64		Report Availability with Student attendance	
65		Report Availability in percentage format	
66		Report Availability in Numeric format	
67		Report Availability of Attendance	
68		Reports should be professional with proper cover page, correct answer, graph, timing and ranking	
69		Report availability in excel and pdf format	
70	Compatibility	Hardware and software should be fully compatible and supplied as an integrated solution by a single bidder	
71	Warranty	Three years warranty	

Item No 51: Lecture Capturing & Streaming System

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Interactive Panel (Size)	Built-in touchscreen display of minimum 10 inches for device control	
2	HDMI Inputs	2 x HDMI In or more	
3	HDMI Output	1 x HDMI Out for Local Display	
4	Audio Inputs	1 x Line In and 1 x MIC In (unbalanced)	
5	Audio Output	1 x Line Out	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
6	USB port	Minimum 1 x USB port (USB 3.0 or higher)	
7	Storage	1TB (Internal) or more	
8	Video Compression	H.264 or better	
9	Bitrate	300kbps to 16 Mbps or better	
10	Resolution	Up to Full HD (1920×1080), with selectable resolutions	
11	Video Switching	During Live Streaming and recording via the touch screen or Web UI	
12	Video Layout	PIP, POP, Single video	
13	Encoded Streams	Minimum dual stream encoding capability (Full HD)	
14	Audio Encoding	AAC (Sampling @ 48 khz) up to 320kbps	
15	Network	1 x 1000 Ethernet port (RJ45)	
16	Video Format	MP4, 1080p	
17	Controls	Web UI Panel, 10.1' touch screen, RS232 or IP-based control interface	
18	Power Consumption	Maximum power consumption ≤30W	
19	Additional Component	Power On/ Off Switch, Reset Button	
20	10.1" Touchscreen	Should have user friendly touchscreen and web interface makes switching easy between your connected sources or layouts	
21	Audio Support	Mic and line-level audio input with gain control	
22	Stream to View Everywhere	Should have capability of live stream to YouTube/ Facebook or web browsers locally over RTMP or RTMPS	
23	Integration	Device should have capability to Integrates with 3rd Party central control systems	
25	Local Video Output	Should able to view content to a larger display through the local HDMI video output. Configure to share all input sources or switched program output	
26	Full HD Recording	Should supports 1080p Full HD recording	
27	Table Mount	Table mount stand should be supplied to mount the streaming device	
28	Certifications	Valid BIS certification for the product as applicable. Product catalogue/datasheet should be available on OEM website	
29	Warranty	Three years warranty	

Item No 52: Room Controlling Device with 10” Display, Light & power sequencer

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Technical Specifications of	Room Controlling Device	
2	CPU	ARM Cortex-A7 or better	
3	Operating system	Embedded latest Linux-based operating system	
4	Memory	512 MB or higher	
5	Connectivity Ports	4x Digital I/O input, 1x RJ45 or more	
6	Controlling port	Configurable control ports using industry- standard connectors	
7	Relay Port	8x relay or more	
8	Infrared Port	Infrared ports or serial communication ports (RS232) for device control	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
9	System LED Indicator	3x LED system status indicator or more	
10	Cloud Programming	Cloud programming without installing software	
11	Network Control	Supports various network control protocols (TCP/UDP/Telnet/Http)	
12	Debugging	Remote debugging	
13	Power Supply	24VDC 1A	
14	Operational Temperature	0℃ ~50℃	
15	Operational Humidity	10% to 90%	
16	Technical Specifications of	Wall Mount controller Screen	
17	Size	10" or higher	
18	Display Technology	IPS	
19	Resolution	1024 x 600 or better	
20	Connectivity Ports	1x RJ 45 PoE, 2x USB ports (USB ports for data transfer and system updates), 1x RS232 or more	
21	Touch Panel	Capacitive Touch Panel	
22	Touch points	5 points or better	
23	CPU	Quad core A53 or better	
24	Inbuilt OS	Android 10 or higher	
25	RAM	1 GB or more	
26	Storage	8 GB or more	
27	Mount	Wall mounted	
28	Feature	Support APP remote control and install, Support working with the third-party control devices	
29	Technical Specifications of	8-chanel Power sequencer	
30	Control Display	2-inch LCD display for Voltage information	
31	Power Port	8 switch channel outputs, the delay on and off time of each channel can be set freely	
32	Logic Switch	Support programmable definition of various logic switches	
33	Controlling Data Interface	Support standard RS232 data interface and open control protocol	
34	Alarm	Undervoltage, overvoltage detection and alarm.	
35	Lock	Support panel Lock function to prevent misuse.	
36	Group Management	9 groups of scenes save/recall, scene management application is simple and convenient	
37	Power supply	AC 220V 50/60Hz, 30A	
38	Power output	8-way,30A	
39	Technical Specifications of	8-chanel Light sequencer	
40			
41	Communication Ports	1x USB, 1x RS232, 1x RS485, 1x RJ45 network control or more	
42	Relay port	8x Relay or more	
43	Loading Capacity	20A Single channel or better	
44	Logic Switch	Support programmable definition of various logic switches	
45	Controlling Data Interface	Support standard RS232 & RS485 data interface and open control protocol	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
46	USD Data	Support standard USB data interface, more convenient to connect with PC.	
47	Lock	Support keyboard lock (LOCK) function	
48	Power supply	AC 220V 50/60Hz, 30A	
49	Power output	8-way,30A	
50	Integration	All components should be fully compatible and supplied as an integrated solution by a single bidder	
51	Warranty	Three years warranty	

Item No 53: Learning Management System with (50+1 Students)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1.	LMS Should Industry Model Standard major LMS's. Integration show up as capabilities be	Support Sharable Content Object Reference (SCORM), should support API integration with like Moodle that allows Moodle courses to folders within the LMS solution and data should Imported/exported to and from LMS platform.	
2.	The LMS Mobile App where Application live class,	Should have Android & iOS supported Mobile. Teacher can assign activities, Student can join do the assignments and Teacher can evaluate it.	
3.	LMS should Secure platform with SSL access	have should be used a secure encrypted session Security to provide secure access of platform.	
4.	Language LMS should Support	support Hindi & English Language	
5.	LMS should user experience, User Interface managing built font	be optimized for desktop, tablet, and mobile navigation bar and a simplified process for favorites sites, screen-reader compatibility & in-libraries	
6.	LMS should integrated Reporting consolidated competency scorecard,	have Individual student Grade Summary with Teacher Review Mode, Simplified and Import/Export process of reports, student module, live log reports & automated Session attendance of Students	
7.	LMS should Lesson tools with separate	have Menu bar with categorized menu items tabs to organize a defined lesson	
8.	User notification LMS should system	have rich text pop-up notifications for users	
9.	LMS should ability to see students, date, time to	have reporting capabilities, including the all assessment submissions of individual Sections, groups with specific timelines (e.g., due complete the assessment, etc.)	
10.	LMS should Online Conduct Assessment suspicious	have online Proctored test provision to Highly Secure online examinations to identify any behavior detected during the test	
11.	LMS should shuffling true false, subjective missing word.	have question bank, question & answer option, select random question, multiple choice, drag and drop, marker, calculations, objective and type questions, numerical questions & select	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
12.	LMS should text, resources, using media Instruction needs of a Design requirements, robust toolset: question timed	be able to create online assignments, Organize quizzes, tests, organize interactive lesson and other content onto a single page to fit the given lesson, post a summary outline of course Create and manage online assessments using closed and open-ended questions, matching, pools, set point value, auto-grading, statistics & assessments with high level of encryption.	
13.	LMS should deadlines, and connect Communication assignments, Tools Online chat participants, messaging	be able to schedule and maintain time activities and events related to a course, project to web link related to announcements, assessments, materials, etc. should supports tool, built in Online discussion forum for Create and manage email list for invites, to individual/groups etc.	
14.	LMS solution Collaboration between should have bandwidth	should have Live Video & Audio feature with two-way communication Teacher and Students in Live Classroom and feature to manage resolution for effective utilization.	
15.	LMS solution Learners in should be else to view Live Video should be Collaboration participants capturing/	should be capable to connect up to 100 a live classroom. By rotation, any participant able to be brought on main screen for everyone up to 20 speaker videos simultaneously. there provision for room chats, private chat, raise hand, mute/unmute, video enable/disable, Lecture session recording and breakout rooms.	
16.	Should have eraser, etc. Should	Inbuilt Whiteboard with options like pen, Highlighter, Text input, Shapes, Live picture input have Inbuilt locking tool for live classroom	
17.	Should have once live editing Tool. to manage	Instant recording on cloud: Recording saved class is finished. Should have In-Built Video Should have Inbuilt device management tool webcam, mic and speaker in live class	
18.	Should have playlist via public and for synchronous	YouTube Integration and Host can create the YouTube. (Integrated YouTube search to find unlisted YouTube videos and share them in class playback).	
19.	The LMS option: User class and option for all the Host to turn Learners, live classroom, to share their shared files, classroom,	platform should have Inbuilt Breakout Room can create breakout rooms during the Live manually assign Learners to rooms. Should have Host to turn on and off microphone & camera of participants at the same time. Should have option for on/off only microphone/camera of any option for Host to hide the learners webcam in option for Instructors to allow participants screens, writing controls, chat, Notes, play option to Create & import the quizzes in live should have Full screen mode for learner & Host	
20.	LMS should communication, assigning controls to users. Ability Teacher/ Admin Interface courses, learner/teacher Upload and video, audio, weblink. database of	be able to define groups for the purposes of grading, permissions, collaboration, work or assessments, delegate administrative staff members, grant site access and privileges to to Manage approval of registration, Create Admin Accounts, send notifications, create create learning material badges/certificates for appreciation, Track learners' performance, view course content, Content Type can be- document (ppt, pdf, word, text, ppt) and Solution should have the option to upload bulk Students & Teachers.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
21.	LMS should upload and file, track videos, maintain progress, Teacher calendar Interface design and	be able to produce and manage lesson plans, view course content, upload and play HTML learners performance, view / edit profile, add send/check notification for upcoming events, tasking, get information about course statistics and publishing events in calendar, use dynamic where user can view all the activities at a glance, set quiz tests and view online activities.	
22.	Teacher prepared the lessons to the students. able to access devices or	should be able to publish the lesson to class once Once the lesson is published any changes made to by the teacher should be automatically reflected Entire class should get notification and be the lessons published by the teacher on their on browser.	
23.	LMS should Parents Interface progress of	Have the capability to track the attendance and students.	
24.	LMS platform Cloud Storage for the platform	Should be provided with up to 15GB of cloud each license and with a validity of three years for	
25.	Three years Warranty	Warranty	

Item No 54: Device Management Software

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Device Management Software	*Software should shows Device Usage Time Duration for which a Interactive Panel was On and Off– Daily, weekly and monthly basis *Details of Online, offline (Interactive Panel) should be visible on Dashboard Device-management software shall display installed-application inventory and shall support remote deployment/removal of applications where permitted by the device OS and enterprise-management APIs. Where direct silent installation/removal is restricted, an administrator-approved managed-app catalogue/workflow shall be provided. *Centralized Reports should be generated school wise, district wise, Block wise and state wise (fields should be customizable according to user) *Usage tracking application shall Sync the usage details to cloud based application over internet *In absence of internet connectivity, the usage tracking application shall store the logs locally & shall send the details to cloud based application once the internet connectivity is available. *The access to cloud-based application for usage tracking shall be provided in the form of user ID & password for secure access *Details of Applications used/run on IFPD with Start time, end time and duration and application name the reports should be in graphical form *Platform and application should have provision to fetch the location where IFPD is running The platform shall provide device online/offline and health/fault alerts. Application install/uninstall events shall be reported where supported by the device OS/management API; such event alerts shall not be mandatory where the OS prohibits them. *Platform should have provision to export reports in excel The dashboard shall show current online/offline status and last-seen time for each IFPD. Configurable administrator notifications may be provided; a dedicated push notification every time a device comes online shall not be mandatory. *Role management and assignment of Users should be available in the Platform. The Software should be of the same OEM as Interactive Display to avoid any compatibility issues.	
2	Warranty	Three years warranty	

Item No 55: Digital Audio-Conferencing System – Wired Based Chairman Unit option 1

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Priority Control	Chairman Unit should have functionality to override over other mic central control to mute all other microphone	
2	Touch Buttons	Should have Two touch enable button with LED Indication	
3	Microphone type	Electret condenser microphone	
4	Microphone directionality	Cardioid directionality	
5	Frequency response	80Hz~16KHz or better	
6	Microphone input impedance	Suitable microphone input impedance	
7	Sensitivity	High sensitivity suitable for speech applications	
8	Maximum SPL	High maximum SPL suitable for conference environments	
9	SNR	>80dB(A) or better	
10	THD	Low distortion audio performance	
11	Headphone load	16-32Ω	
12	Maximum headphone volume	40mW	
13	Headphone jack	3.5mm	
14	Maximum power consumption	≤3W	
15	LED indication for Mute/Unmute	Supported	
16	Inter Connectivity	Digital Loop-In/Loop-Out	
17	Connector	2x RJ45 Connector for digital connectivity	
18	Power supply	Controller power supply	
19	Installation	Desktop	
20	Mic Button	Touch Button to enable/disable microphone	
21	Priority Button	Should have Touch Button for priority function to turn off all delegate units that are speaking	
22	Built-in DSP	Built-in DSP for echo suppression, noise reduction, and clear audio output	
23	Built in Speakers	Built-in speaker with automatic mute during microphone activation to prevent feedback	
24	Audio Output	Should have 3.5 mm output sockets with Volume adjustment slider	
25	Warranty	Three years warranty	

Item No 56: Digital Audio-Conferencing System – Wired Based Delegate Unit option 2

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Microphone type	Electret condenser microphone	
2	Microphone directionality	Cardioid directionality	
3	Frequency response	80 Hz – 16 kHz or better	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
4	Microphone input impedance	Suitable microphone input impedance	
5	Sensitivity	High sensitivity suitable for speech applications	
6	Maximum SPL	High maximum SPL suitable for conference applications	
7	SNR	≥80 dB(A)	
8	THD	Low distortion audio performance	
9	Headphone load	16-32Ω	
10	Maximum headphone volume	40mW	
11	Headphone jack	3.5mm	
12	Maximum power consumption	3 W or better	
13	LED indication for Mute/Unmute	Supported	
14	Inter Connectivity	Digital Loop-In/Loop-Out	
15	Connector	2x RJ45 Connector for digital connectivity	
16	Power supply	Controller power supply	
17	Installation	Desktop	
18	Mic Button	Touch Button to enable/disable microphone	
19	Built-in DSP	Built-in DSP for echo suppression, noise reduction, and clear audio output	
20	Built in Speakers	Built-in speaker with volume control and feedback suppression; speaker should automatically mute when microphone is active.	
21	Audio Output	Should have 3.5 mm output sockets with Volume adjustment slider	
22	Warranty	Three years warranty	

Item No 57: Digital Audio-Conferencing System – Central Conference Control Unit

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Microphone capacity	Should support large-scale conference systems with expandable architecture, capable of supporting minimum 1000 wired microphone units or higher, with provision for wireless integration	
2	Number of Channels	Minimum 16-channel audio processing or equivalent matrix capability	
3	DSP functionality	Built-in DSP with audio matrix processing, feedback suppression, equalization (EQ), volume control, delay adjustment and other standard audio processing features	
4	USB Recording	Should support direct audio recording and playback via USB storage device	
5	Microphone management modes	Support for multiple microphone management modes such as FIFO, Normal, Voice Activation and Apply mode or equivalent	
6	Open Microphone	Configurable number of simultaneous open microphones, minimum 8 or more	
7	Frequency Response	80 Hz – 20 kHz or better	
8	SNR	≥ 85 dB(A)	
9	Dynamic Range	≥ 80 dB	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
10	Total Harmonic Distortion	≤ 0.05%	
11	Audio Input	2x Balance Phoenix terminal, 1x XLR LINE In, 1 x RCA line In or more	
12	Audio Output	16x Balance Phoenix terminal, 1x XLR LINE out, 1 x RCA line out or more	
13	Output Load	>1KΩ or better	
14	Control Display	Device should have inbuilt 4.3-inch TFT colourful touch screen to control the device.	
15	Control Port	1x Alarm, 1x RS485, 1x RJ45 PC control, 1x RJ45 Dante, 1x RJ45 Extension Port, 1x RJ45 WiFi port, 2x RS232 Serial Port or more	
16	LAN Interface	1×RJ45 Network Port	
17	Delegate interconnectivity	4 Nos of 6-pin aviation connector	
18	Extension Port	Should Have 1 RJ 45 Extension port to Connect to the extension controller	
19	USB interface	USB x1 for Record/playback	
20	Amplifier Output	2×25W/4Ω or better	
21	Static power consumption	30W or less	
22	Output power consumption	320W or less	
23	PTZ Camera control	Should supported PTZ camera controlling for Voice tracking functionality	
24	Warranty	Three years warranty	

Item No 58: Digital Audio-Conferencing System – Wireless Based Chairman Unit

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Priority Control	Chairman Unit should have functionality to override over other mic central control to mute all other microphone	
2	Push Buttons	Should have Two push enable button for microphone on/off & Priority	
3	Touch Display	Should have 4" Touch Screen	
4	Microphone type	Short gun square microphone stem with voice pickup function	
5	Microphone directionality	Unidirectional Super cardioid	
6	Frequency response	60Hz~18KHz	
7	Microphone input impedance	1KΩ	
8	Sensitivity	-43dBV/Pa	
9	Maximum SPL	105dB (THD>3%)	
10	SNR	>80dB(A) or better	
11	THD	<0.1% or better	
12	Crosstalk	>70dB or better	
13	Interface	3.5mm, USB Type-C, USB Type-A	
14	Maximum power consumption	3 W or better	
15	LED indication for Mute/Unmute	Supported	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
16	Wireless Frequency	5 GHZ or better	
17	Power supply	Rechargeable Li-ion battery power supply	
18	Battery Capacity	5200mAh or better	
19	Backup Time	Up to 7 Hours or better	
20	Installation	Desktop	
21	Mic Button	Touch Button to enable/disable microphone	
22	Built-in DSP	Should have built-in DSP audio processor with 48KHZ sampling rate to provide clear and bright sound	
23	Audio Output	Should have 3.5 mm output sockets	
24	Inbuilt Touch Display	Should have inbuilt 4-inch display for conference process information, which should be displayed: speaking mode, speaking time, speaker information.	
25	Encryption technology	should support 128-bit AES encryption technology, with WPA/WPA2 wireless security technology, prevent eavesdropping and unauthorized access, provide higher confidentiality of the conference system	
26	Intelligent fault detection	Should have Intelligent fault detection function, prompting the user AP failure, host communication failure, signal strength is too low and so on	
27	Warranty	Three years warranty	

Item No 59: Digital Audio-Conferencing System – Wireless Based Delegate Unit

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Push Buttons	Should have Two push enable button for microphone On/off	
2	Touch Display	Should have 4" Touch Screen or better	
3	Microphone type	Short gun square microphone stem with voice pickup function	
4	Microphone directionality	Unidirectional Super cardioid	
5	Frequency response	60Hz~18KHz	
6	Microphone input impedance	1KΩ	
7	Sensitivity	-43dBV/Pa	
8	Maximum SPL	105dB (THD>3%)	
9	SNR	>80dB(A) or better	
10	THD	<0.1% or better	
11	Crosstalk	>70dB or better	
12	Interface	3.5mm, USB Type-C, USB Type-A	
13	Maximum power consumption	3 W or better	
14	LED indication for Mute/Unmute	Supported	
15	Wireless Frequency	5 GHZ or better	
16	Power supply	Rechargeable Li-ion battery power supply	
17	Battery Capacity	5200mAh or better	
18	Backup Time	Up to 7 Hours or better	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
19	Installation	Desktop	
20	Mic Button	Touch Button to enable/disable microphone	
21	Built-in DSP	Should have built-in DSP audio processor with 48KHZ sampling rate to provide clear and bright sound	
22	Audio Output	Should have 3.5 mm output sockets	
23	Inbuilt Touch Display	Should have inbuilt 4-inch display for conference process information, which should be displayed: speaking mode, speaking time, speaker information.	
24	Encryption technology	should support 128-bit AES encryption technology, with WPA/WPA2 wireless security technology, prevent eavesdropping and unauthorised access, provide higher confidentiality of the conference system	
25	Intelligent fault detection	Should have Intelligent fault detection function, prompting the user AP failure, host communication failure, signal strength is too low and so on	
26	Warranty	Three years warranty	

Item No 60: Digital Audio-Conferencing System – Central Conference Control Unit for

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Microphone capacity	Device Should Support minimum up to 4000 Wired Microphone Unit and 300 wireless Units	
2	Number of Channels	60CH or better	
3	DSP functionality	Should have inbuilt DSP with audio matrix, EQ, volume, delay and other adjustment functions	
4	USB Recording	Device should support audio recording with additional USB Disk/Pen drive with On panel physical button and LED indication.	
5	Microphone management modes	FIFO mode, NORMAL Mode, VOICE (voice- activated mode), APPLY (application mode)	
6	Open Microphone	Should supports up to 8 wired microphones & 6 wireless microphone opened at the same time	
7	Frequency Response	80Hz~16KHz	
8	SNR	>85dB(A) or better	
9	Dynamic Range	>80dB or better	
10	Total Harmonic Distortion	<0.05% or better	
11	Audio Input	2x Balance Phoenix terminal, 1 x RCA line In or more	
12	Audio Output	1x XLR LINE Out, 1 x RCA line Out or more	
13	Output Load	>1KΩ or better	
14	Control Display	Device should have inbuilt 4.3-inch TFT colourful touch screen to control the device.	
15	Front interface	Headphone x 1, USB x1 for Record/playback	
16	Rear Interface	1x Alarm, 1x RJ45 PC control, 1x RJ45 Dante, 1x RJ45 Extension Port, 1x RJ45 Wi-Fi port, 2x RS232 Serial Port or more	
18	Extension Port	Should Have 1 RJ 45 Extension port to Connect to the extension controller	
19	Static power consumption	30W or less	
20	Output power consumption	150W or less	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
21	PTZ Camera control	Should supported PTZ camera controlling for Look at me tracking functionality	
22	Warranty	Three years warranty	

Item No 61: Digital Audio-Conferencing System – Wireless Access Point

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Status Indicator	Should be available for different system operations indications	
2	Ethernet port	1 Gigabit Ethernet Port or better	
3	Console port	1 RJ45 port	
4	Antenna	Built-in matrix smart antenna or better	
5	PoE	Support 802.3at/bt Power over Ethernet standard	
6	Transmit power	≤ 20dBm or better	
7	Adjustable power granularity	1dBm	
8	Adjustable power range	1dBm~corresponding national regulations	
9	Power consumption	<15W or better	
10	Warranty	Three years warranty	

Item No 62: Digital Audio-Conferencing System – Charging Station

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Charging ports	Minimum 10 USB Charging ports in single unit should be available	
2	Total rate power	200-Watt 40 Amp. Or better	
3	Input voltage	220V AC 50/60Hz	
4	Output voltage	5 Volt 2 Amp from each port or better	
5	Voltage indication display	Should available	
6	Warranty	Three years warranty	

Item No 63: Flush Mount Boundary Layer Microphone

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Microphone type	Should have push enable pop-up microphone design	
2	Touch Button	Should have Touch enable button for Mic on/off with LED status indicator	
3	Microphone directionality	Cardioid pattern	
4	Frequency response	40Hz~18KHz	
5	Microphone input impedance	200 Ω	
6	Sensitivity	-40dBV/Pa	
7	Maximum SPL	142dB (THD>3%)	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
8	SNR	>65dB(A) or better	
9	Interface	3-Pin XLR	
10	LED indication for Mute/Unmute	Supported	
11	Power supply	DC 11-52V Phantom power	
12	Installation	Table Flush Mount	
13	Maximum Product Dimensions	86 mm Length, 40mm Diameter & 50 mm width or less	
14	Warranty	Three years warranty	

Item No 64: Cascade Device for Flush Mount Boundary Layer Microphone

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Voltage supply	48V DC	
2	Static power consumption	1W	
3	Frequency Response	20Hz ~ 20KH	
4	Noise ratio (S / N)	> 80dB or better	
5	Total harmonic distortion	<0.05%	
6	Channel Crosstalk	> 80dB	
7	Connectors	2xRJ45 port, 2xBoundary condenser mic phoenix, 2xSwitch for MIC/48V option, 2xGain adjust knob, 2x Group phoenix connector, 2x Group phoenix connectors including: Ground Mic button for microphone ON/OFF, 2x 5 pin phoenix connector for speaker and headphone	
8	LED Power	5 V, max. 40 mA	
9	Headphone Output impedance	16 Ohm	
10	Speaker Output impedance	8 Ohm	
11	Warranty	Three years warranty	

Item No 65: Central Conference Controller for Flush Mount Microphone

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Number of Channels	60CH or better	
2	DSP functionality	Should have inbuilt DSP with audio matrix, EQ, volume, delay and other adjustment functions	
3	USB Recording	Device should support audio recording with additional USB Disk/Pen drive with On panel physical button and LED indication.	
4	Microphone management modes	Open mode, NORMAL Mode, VOICE Mode, FIFO Mode	
5	Open Microphone	Should supports up to 8 wired microphones & 6 wireless microphone opened at the same time	
6	Frequency Response	20Hz~20KHz	
7	SNR	>85dB(A) or better	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
8	Dynamic Range	>90dB or better	
9	Total Harmonic Distortion	<0.05% or better	
10	Audio Input	2x Balance Phoenix terminal, 1 x RCA line In or more	
11	Audio Output	1x XLR LINE Out, 1 x RCA line Out or more	
12	Output Load	>1KΩ or better	
13	Control Display	Device should have inbuilt LCD Display with 4-Way button for menu operate and Master volume control knob	
14	Front interface	Headphone x 1, USB x1 for Record/playback	
15	Rear Interface	1x RJ45 PC control, 1x RCA audio input, 1x XLR audio input, 1x RCA audio output, 1x XLR audio output, 6x Phoenix connector audio output, 1x RJ45 for wireless AP, 2x RS232 for Control, 1x phoenix connector for camera control keyboard or more	
16	Interconnectivity	2x RJ45 digital audio connection, 2x RJ45 for chairman unit, delegate unit, unit translators and other connection	
17	Static power consumption	30W or less	
18	Output power consumption	150W or less	
19	PTZ Camera control	Should supported PTZ camera controlling for Look at me tracking functionality	
20	Warranty	Three years warranty	

Item No 66: Retractable Chairman Display (15 inch)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Main Screen Size	15.6 inch or better	
2	Touch Screen	Support	
3	Lifting Time	28 sec or better	
4	Elevation Angle	0-30° or more	
5	Resolution	Full HD (1920x1080) or better	
6	Brightness	250cd/㎡ or better	
7	Contrast	600:1 or better	
8	Display thickness	9.7mm or less	
9	Video Port	1 VGA,1 HDMI	
10	Brightness	220cd/㎡ or better	
11	Resolution	WXGA (1366×768) or better	
12	USB Support	Desktop panel should have USB interface to browse or upload the files using USB Drive	
13	Device Structure	The device should be made up of all-aluminium structure with high-quality aluminium material and CNC engraving processing treatment the overall display frame and the cabinet should be of aluminium alloy	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
14	Screen Transmission	The transmission structure should be specially treated to minimize the noise with high-quality stretch-resistant belts, high-precision sliding guide rail and linear bearings, and AC gear motor as the driving power; the central control protocol, with strong compatibility, should be compatible with all computer controllers. The screen to be powered on when turning up, and powered off when turning down automatically	
15	Power Supply	AC 220V 50-60/HZ	
16	Power Consumption	25W or better	
17	Warranty	Three years warranty	

Item No 67: e-Sign Cards (Dual Side Display)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Display Sizes 4.2" & (Inches)	7.5"	
2	Orientation Horizontal		
3	Display E – Ink Technology		
4	Panel Dual		
5	Display Colour BWRY	(Black, White, Red, Yellow)	
6	Power Input Battery	Powered	
7	Connectivity BLE 5.1		
8	Web Management	Application for Customer and Store	
9	Mobile content	Application with store login for publishing to the H/W devices	
10	Template content	Manager for creating and Managing	
11	Tag	grouping for mapping templates to Tag groups	
12	User users	Management - assign independent Roles to	
13	Cloud	based solution	
14	Bulk application	update Capabilities - through mobile	
15	Battery Life 3 years (With 4 content changes a day)		

Item No 68: e-Sign Cards (Single Side Display)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1.	Display Size 4.2" & (Inches)	7.5"	
2.	Orientation Horizontal		
3.	Display E – Ink Technology		
4.	Panel Single		
5.	Display Colour BWRY	(Black, White, Red, Yellow)	
6.	Power Input Battery	Powered	
7.	Connectivity BLE 5.1		

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
8.	Web Management	Application for Customer and Store	
9.	Mobile content	Application with store login for publishing to the H/W devices	
10.	Template content	Manager for creating and Managing	
11.	Tag	grouping for mapping templates to Tag groups	
12.	User users	Management - assign independent Roles to	
13.	Cloud	based solution	
14.	Bulk application	update Capabilities - through mobile	
15.	Battery Life 3 years (With 4 content changes a day)		

Item No 69: 65-inch Interactive Flat Panel Display

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1.	Display Size	65-inch (±2") Interactive Flat Panel Display	
2.	Display Technology	Direct LED, DLED or better	
3.	Resolution	3840 × 2160 (4K UHD)	
4.	Refresh Rate	Minimum 60 Hz	
5.	Brightness	Brightness: 400 nits or higher (typical).	
6.	Contrast Ratio	Minimum 1200:1	
7.	Viewing Angle	178° H/V	
8.	Surface	Anti-glare, Anti-fingerprint, Toughened Glass (7H hardness)	
9.	Protection Glass	Protection glass: Minimum 3.2 mm tempered/toughened anti-glare glass, 7H hardness or better; an equivalent construction meeting the same protection and touch-performance requirements shall be acceptable.	
10.	Touch Technology	IR/Hybrid IR/equivalent	
11.	Touch Points	Minimum 40	
12.	Touch Accuracy	Touch accuracy: ±1.5 mm or better.	
13.	Touch Response	≤8 ms	
14.	Writing Latency	≤40 ms	
15.	Stylus	Stylus storage: Magnetic pen holder, integrated pen tray/slot, clip or equivalent secure holder shall be acceptable. Required styluses shall be supplied.	
16.	Recognition	Automatic pen, finger and palm recognition	
17.	Operating System	Operating system: Android 14 or later with valid Google EDLA certification for the offered model and OEM security/update support during the warranty period.	
18.	Processor	Octa-core or better	
19.	RAM	Minimum 8 GB	
20.	Storage	Internal storage: 64 GB or higher.	
21.	Audio	Built-in audio: Minimum 15 W × 2 speakers. A higher-output built-in or supplied external audio system shall be acceptable.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
22.	HDMI	HDMI: Minimum 2 HDMI inputs and 1 HDMI output. The output function may alternatively be provided through an equivalent USB-C/HDMI digital video output with the required adapter supplied.	
23.	USB	Connectivity: At least 2 × USB Type-A ports, including at least 1 × USB 3.0 or higher, and 1 × USB Type-C. Microphone/earphone functions may be provided through dedicated 3.5 mm ports or equivalent USB/USB-C/HDMI digital audio interfaces; any required adapters shall be included.	
24.	USB-C	Video, audio, touch & minimum 65W PD	
25.	OPS	Intel OPS compliant	
26.	LAN	10/100/1000 RJ45	
27.	Wireless	Wireless: Dual-band Wi-Fi 5 (802.11ac) or higher. Wi-Fi 6/6E is preferred and shall be accepted as higher compliance.	
28.	Bluetooth	5.2 or higher	
29.	Screen Sharing	Native casting from Windows, Android, macOS, ChromeOS & iOS	
30.	Whiteboard	Unlimited canvas, annotation, QR sharing, recording	
31.	Power	100–240V AC, 50/60Hz	
32.	Power Consumption	Maximum OEM-rated power consumption: 450 W or lower. Lower consumption shall be treated as better compliance.	
33.	Standby	≤0.5 W	
34.	Certifications	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.	
35.	Warranty	3 Years comprehensive onsite OEM warranty	

Item No 70: 75-inch Interactive Flat Panel Display

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1.	Display Size	75-inch (±2") Interactive Flat Panel Display	
2.	Display Technology	Direct LED, DLED or better	
3.	Resolution	3840 × 2160 (4K UHD)	
4.	Refresh Rate	Minimum 60 Hz	
5.	Brightness	Brightness: 400 nits or higher (typical).	
6.	Contrast Ratio	Minimum 1200:1	
7.	Viewing Angle	178° H/V	
8.	Surface	Anti-glare, Anti-fingerprint, Toughened Glass (7H hardness)	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
9.	Protection Glass	Protection glass: Minimum 3.2 mm tempered/toughened anti-glare glass, 7H hardness or better; an equivalent construction meeting the same protection and touch-performance requirements shall be acceptable.	
10.	Touch Technology	IR/Hybrid IR/equivalent	
11.	Touch Points	Minimum 40	
12.	Touch Accuracy	Touch accuracy: ±1.5 mm or better.	
13.	Touch Response	≤8 ms	
14.	Writing Latency	≤40 ms	
15.	Stylus	Stylus storage: Magnetic pen holder, integrated pen tray/slot, clip or equivalent secure holder shall be acceptable. Required styluses shall be supplied.	
16.	Recognition	Automatic pen, finger and palm recognition	
17.	Operating System	Operating system: Android 14 or later with valid Google EDLA certification for the offered model and OEM security/update support during the warranty period.	
18.	Processor	Octa-core or better	
19.	RAM	Minimum 8 GB	
20.	Storage	Internal storage: 64 GB or higher.	
21.	Audio	Built-in audio: Minimum 15 W × 2 speakers. A higher-output built-in or supplied external audio system shall be acceptable.	
22.	HDMI	HDMI: Minimum 2 HDMI inputs and 1 HDMI output. The output function may alternatively be provided through an equivalent USB-C/HDMI digital video output with the required adapter supplied.	
23.	USB	Connectivity: At least 2 × USB Type-A ports, including at least 1 × USB 3.0 or higher, and 1 × USB Type-C. Microphone/earphone functions may be provided through dedicated 3.5 mm ports or equivalent USB/USB-C/HDMI digital audio interfaces; any required adapters shall be included.	
24.	USB-C	Video, audio, touch & minimum 65W PD	
25.	OPS	Intel OPS compliant	
26.	LAN	10/100/1000 RJ45	
27.	Wireless	Wireless: Dual-band Wi-Fi 5 (802.11ac) or higher. Wi-Fi 6/6E is preferred and shall be accepted as higher compliance.	
28.	Bluetooth	5.2 or higher	
29.	Screen Sharing	Native casting from Windows, Android, macOS, ChromeOS & iOS	
30.	Whiteboard	Unlimited canvas, annotation, QR sharing, recording	
31.	Power	100–240V AC, 50/60Hz	
32.	Power Consumption	Maximum OEM-rated power consumption: 550 W or lower. Lower consumption shall be treated as better compliance.	
33.	Standby	≤0.5 W	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
34.	Certifications	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.	
35.	Warranty	3 Years comprehensive onsite OEM warranty	

Item No 71: 86-inch Interactive Flat Panel Display

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1.	Display Size	86-inch (±2") Interactive Flat Panel Display	
2.	Display Technology	Direct LED, DLED or better	
3.	Resolution	3840 × 2160 (4K UHD)	
4.	Refresh Rate	Minimum 60 Hz	
5.	Brightness	Brightness: 400 nits or higher (typical).	
6.	Contrast Ratio	Minimum 1200:1	
7.	Viewing Angle	178° H/V	
8.	Surface	Anti-glare, Anti-fingerprint, Toughened Glass (7H hardness)	
9.	Protection Glass	Protection glass: Minimum 3.2 mm tempered/toughened anti-glare glass, 7H hardness or better; an equivalent construction meeting the same protection and touch-performance requirements shall be acceptable.	
10.	Touch Technology	IR/Hybrid IR/equivalent	
11.	Touch Points	Minimum 40	
12.	Touch Accuracy	Touch accuracy: ±1.5 mm or better.	
13.	Touch Response	≤8 ms	
14.	Writing Latency	≤40 ms	
15.	Stylus	Stylus storage: Magnetic pen holder, integrated pen tray/slot, clip or equivalent secure holder shall be acceptable. Required styluses shall be supplied.	
16.	Recognition	Automatic pen, finger and palm recognition	
17.	Operating System	Operating system: Android 14 or later with valid Google EDLA certification for the offered model and OEM security/update support during the warranty period.	
18.	Processor	Octa-core or better	
19.	RAM	Minimum 8 GB	
20.	Storage	Internal storage: 64 GB or higher.	
21.	Audio	Built-in audio: Minimum 15 W × 2 speakers. A higher-output built-in or supplied external audio system shall be acceptable.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
22.	HDMI	HDMI: Minimum 2 HDMI inputs and 1 HDMI output. The output function may alternatively be provided through an equivalent USB-C/HDMI digital video output with the required adapter supplied.	
23.	USB	Connectivity: At least 2 × USB Type-A ports, including at least 1 × USB 3.0 or higher, and 1 × USB Type-C. Microphone/earphone functions may be provided through dedicated 3.5 mm ports or equivalent USB/USB-C/HDMI digital audio interfaces; any required adapters shall be included.	
24.	USB-C	Video, audio, touch & minimum 65W PD	
25.	OPS	Intel OPS compliant	
26.	LAN	10/100/1000 RJ45	
27.	Wireless	Wireless: Dual-band Wi-Fi 5 (802.11ac) or higher. Wi-Fi 6/6E is preferred and shall be accepted as higher compliance.	
28.	Bluetooth	Bluetooth: Version 5.2 or higher. An offered version 5.3 or later shall be compliant.	
29.	Screen Sharing	Native casting from Windows, Android, macOS, ChromeOS & iOS	
30.	Whiteboard	Unlimited canvas, annotation, QR sharing, recording	
31.	Power	100–240V AC, 50/60Hz	
32.	Power Consumption	Maximum OEM-rated power consumption: 650 W or lower. Lower consumption shall be treated as better compliance.	
33.	Standby	≤0.5 W	
34.	Certifications	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.	
35.	Warranty	3 Years comprehensive onsite OEM warranty	

Item No. 72: 10 – 20 Seaters (Option 1)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Sensor	CMOS image sensor of 1/2.8-inch or larger, at least 2 effective megapixels, with progressive scanning.	
2	Resolution Support	Minimum output resolution of 1920×1080 at 30 fps; higher frame rates may be offered.	
3	Dual Stream Support	USB/UVC output supporting at least two standard formats from YUY2, MJPEG and H.264/H.265. Simultaneous streams/formats shall be supported where required by the VC application.	
4	Optical Zoom	At least 10x optical zoom.	
5	Digital Zoom	At least 10x digital zoom; higher zoom may be offered.	
6	Field of View (H/V/D)	At the widest position: diagonal FOV at least 65° and horizontal FOV at least 55°. Vertical FOV and tele-end FOV shall be declared.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
7	Focal Length	OEM-standard motorised zoom lens providing at least 10x optical zoom, with wide-end aperture of F2.0 or better. Focal-length/aperture range shall be declared.	
8	Shutter Speed	Electronic shutter range covering at least 1/30 second to 1/10,000 second, or wider.	
9	Minimum Illumination	Minimum illumination of 0.5 lux or lower at the widest available aperture with AGC enabled; test conditions shall be declared.	
10	White Balance	Automatic and manual white balance, with one-push and/or indoor/outdoor presets or equivalent scene modes.	
11	Backlight Compensation	Backlight compensation shall be supported.	
12	Auto Focus / Flicker / Color Optim.	Auto focus and anti-flicker shall be supported, together with automatic colour optimisation or an equivalent image-processing function.	
13	Digital Noise Reduction	2D and/or 3D digital noise reduction, or equivalent OEM image-noise-reduction technology.	
14	Video S/N Ratio	Video signal-to-noise ratio of at least 50 dB.	
15	Pan Range	Horizontal pan range of at least ±170°.	
16	Tilt Range	Vertical tilt range from at least -30° to +90°, or wider.	
17	Pan Speed	Variable pan speed with a maximum speed of at least 30°/second; complete range shall be declared.	
18	Tilt Speed	Variable tilt speed with a maximum speed of at least 25°/second; complete range shall be declared.	
19	Flip Image (H/V)	Horizontal and/or vertical image flip shall be supported for the proposed mounting arrangement.	
20	Preset Support	At least 100 programmable PTZ presets, with repeatability/accuracy of 0.5° or better.	
21	Control Interface	At least one industry-standard camera-control interface using RS-232, RS-485 and/or IP. VISCA, Pelco-D/P or equivalent documented protocol shall be accepted.	
22	Remote Control	IR, RF or Bluetooth remote control shall be supplied.	
23	USB Interface	USB 2.0 or higher interface supporting UVC. Type-B, Type-C or Type-A is acceptable with the required cable/adaptor supplied.	
24	Power Supply	Operation through OEM-supplied DC power and/or USB power; all necessary power supplies and cables shall be included.	
25	Power Consumption	Maximum power consumption shall be declared and shall not exceed 12 W under normal operation.	
26	Dimensions	Compact tabletop/wall-mountable form factor suitable for the proposed room. Exact dimensions shall be declared and verified against the approved installation layout.	
27	Weight	Net weight not exceeding 2 kg, excluding mounting accessories; actual weight shall be declared.	
28	Accessory	USB cable, required power adaptor, remote control, suitable wall-mount kit and user documentation shall be supplied.	
29	Warranty	Minimum one-year comprehensive OEM/manufacturer warranty; a longer project warranty may be stipulated separately.	
30	Certification	Certification: BIS/Indian-standard compliance wherever legally applicable shall be mandatory. RoHS compliance/declaration and applicable safety/EMC test reports from a BIS-recognized, NABL-accredited or ILAC-signatory laboratory shall be accepted. CE, FCC, CB or equivalent may be submitted as optional supporting evidence and are not separately mandatory.	
31	Device Type	USB audio conference speakerphone suitable for a 10–20 seat room, supporting full-duplex conferencing and extension microphones.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
32	Microphones	OEM-designed microphone array providing 360° pickup. Microphone count and directional arrangement shall be declared but shall not be used as the sole performance criterion.	
33	Microphone Pickup Range	Effective pickup radius of at least 3 metres, extendable to at least 5 metres using the supplied extension microphones.	
34	Extended Coverage	Two extension microphones shall be supplied from day one and shall provide total table coverage of at least 7 metres. OEM-standard cables/connectors are acceptable.	
35	Speaker Output	Speaker output of at least 85 dBA at the OEM-declared measurement distance, suitable for a 10–20 seat room.	
36	Noise Reduction	Digital noise suppression providing at least 15 dB attenuation or demonstrably equivalent ambient-noise reduction.	
37	Audio Technology	DSP-based acoustic echo cancellation with an echo tail of at least 300 ms, or a proven equivalent suitable for the proposed room.	
38	Audio Features	Acoustic echo cancellation, automatic gain control, noise suppression, full-duplex operation and non-linear processing or equivalent functions.	
39	Interface Ports	USB connection, at least two extension-microphone ports and the required power input. Connector types shall be declared and all cables supplied.	
40	USB Type	USB 2.0 or higher; Type-B, Type-C or Type-A connection is acceptable with the required cable supplied.	
41	User Interface	Physical or touch controls for call answer/end, microphone mute, speaker mute and volume adjustment, with clear status indication.	
42	Frequency Range	Audio frequency response covering at least 100 Hz–20 kHz, or wider.	
43	Power Supply	Universal 100–240 V AC, 50/60 Hz power input through the supplied adaptor, and/or USB bus power where supported.	
44	Power Consumption	Maximum power consumption not exceeding 10 W under normal operation.	
45	Operating Temperature	Operating temperature range of at least 0°C to 40°C.	
46	Environmental Humidity	Operating relative humidity range of at least 10%–85%, non-condensing.	
47	Dimensions (L x W x H)	Tabletop form factor suitable for the proposed room and furniture. Dimensions shall be declared; exact catalogue dimensions shall not be mandatory.	
48	Certifications	Certification: BIS/Indian-standard compliance wherever legally applicable shall be mandatory. RoHS compliance/declaration and applicable safety/EMC test reports from a BIS-recognized, NABL-accredited or ILAC-signatory laboratory shall be accepted. CE, FCC, CB or equivalent may be submitted as optional supporting evidence and are not separately mandatory.	

Item No. 73: 10 – 20 Seaters (Option 2)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Package	All-in-one video bar integrating a 4K camera, microphone array and speakers in a single enclosure.	
2	Camera Sensor	CMOS image sensor of 1/2.8-inch or larger with at least 8 effective megapixels and native 4K output.	
3	Resolution	Minimum resolution of 3840×2160 at 30 fps, with support for 1920×1080 and 1280×720.	
4	Field of View	At the widest position: diagonal FOV at least 110°, horizontal FOV at least 100° and vertical FOV at least 65°.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
5	Zoom Capability	At least 5x digital/electronic zoom.	
6	PTZ	Electronic PTZ or mechanical-plus-electronic PTZ capable of framing participants across the intended 10–20 seat room. Effective pan/tilt range shall be declared.	
7	Noise Reduction	2D and/or 3D digital noise reduction, or equivalent OEM image-enhancement technology.	
8	Backlight Compensation	Backlight compensation shall be supported.	
9	Signal-to-Noise Ratio (SNR)	Video signal-to-noise ratio of at least 50 dB.	
10	Microphone Type	Built-in beamforming microphone array providing full-duplex voice pickup.	
11	Number of Microphones	Microphone-array architecture shall be OEM-designed; it must meet the stipulated pickup distance and 360°/room coverage performance. Element count shall be declared.	
12	Microphone Pickup Range	Effective voice-pickup range of at least 5 metres under OEM-declared test conditions.	
13	External Mic Support	Support for at least one OEM-compatible external/extension microphone where additional room coverage is required.	
14	Audio Processing	Built-in acoustic echo cancellation, automatic gain control and noise suppression, with full-duplex communication or equivalent 3A processing.	
15	Speaker Type	Integrated full-range loudspeaker system suitable for a 10–20 seat room.	
16	Speaker Output	Total speaker power of at least 5 W and sound-pressure output of at least 90 dB SPL at the OEM-declared measurement distance.	
17	USB Interface	At least one USB 3.0 or higher UVC/UAC interface. Type-C, Type-B or Type-A is acceptable with supplied cables; additional USB host ports may be offered.	
18	Video Compression Format	H.264 and MJPEG video compression, plus YUY2, NV12 or equivalent UVC-compatible uncompressed format.	
19	Frequency Response	Speaker frequency response covering at least 100 Hz–20 kHz; microphone response shall be declared separately.	
20	Audio over USB	UAC 1.0 or later, with audio sampling rate of at least 32 kHz.	
21	Video over USB Protocol	UVC 1.1 or later.	
22	HDMI Output	At least one HDMI output supporting 4K video. HDMI 1.4 or later is acceptable if it supports the required format.	
23	Bluetooth	Bluetooth 5.0 or later.	
24	Wireless Connectivity	Wi-Fi shall be provided where required for wireless content sharing/BYOM. Infrared or RF connectivity may be used for remote control.	
25	Control Method	Remote control shall be supplied using IR, RF/2.4 GHz or Bluetooth technology.	
26	AI Capabilities	AI-based auto/group framing and speaker/presenter tracking. Automatic view switching or equivalent framing logic shall be acceptable.	
27	Plug & Play Support	USB plug-and-play operation with supported PCs/displays, without proprietary camera/audio drivers.	
28	Installation Options	Suitable hardware for desktop, wall and display/TV mounting shall be available; the selected mounting kit shall be supplied.	
29	Security	Kensington lock slot or an equivalent physical anti-theft provision.	
30	Software Compatibility	Compatible with standard UVC/UAC applications including Microsoft Teams, Zoom, Google Meet and Webex, without being restricted to any proprietary VC application.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
31	Certifications	Certification: BIS/Indian-standard compliance wherever legally applicable shall be mandatory. RoHS compliance/declaration and applicable safety/EMC test reports from a BIS-recognized, NABL-accredited or ILAC-signatory laboratory shall be accepted. CE, FCC, CB or equivalent may be submitted as optional supporting evidence and are not separately mandatory.	

Item No. 74: 20 – 30 Seaters (Option 1)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Speakerphone Type	All-in-one full-duplex speakerphone with USB wired and Bluetooth wireless connectivity, together with a supplied extension speakerphone/microphone unit suitable for a 20–30 seat room.	
2	Sampling Rate & Echo Cancellation	Audio sampling rate of at least 48 kHz and acoustic echo cancellation suitable for the room; echo-tail performance of 300 ms or higher, or proven equivalent.	
3	Microphone Coverage	Internal 360° pickup radius of at least 4 metres, with the supplied extension unit providing total effective coverage of at least 6 metres.	
4	Battery	Built-in rechargeable battery providing at least 15 hours of talk time and 30 days of standby under OEM-declared test conditions. Capacity shall be declared.	
5	Intelligent Features	Beamforming/direction identification and automatic gain control, or equivalent intelligent microphone-processing functions.	
6	Controls	Dedicated controls for microphone mute, speaker mute/volume and Bluetooth/call operation, with clear status indication. Echo cancellation may operate automatically.	
7	Bluetooth Version	Bluetooth 5.0 or later.	
8	Call Merging Capability	Support call bridging/mixing between a USB-connected PC conference call and one mobile connection through Bluetooth and/or 3.5 mm audio.	
9	Power Source	Operation through USB bus power and/or rechargeable battery. USB-C, Type-B or Type-A is acceptable with the required cable supplied; no separate adaptor shall be needed during normal USB use.	
10	External Speakerphone	One compatible extension speakerphone/microphone unit shall be supplied, providing speaker output of at least 80 dBA and the required additional pickup coverage. OEM-standard cable/interface is acceptable.	
11	Mobile Call Support	Mobile-device calling through Bluetooth 5.0 or later and/or 3.5 mm audio. A 3.5 mm interface shall be mandatory only if analog call bridging is operationally required.	
12	Certifications	BIS/Indian-standard compliance wherever legally applicable; RoHS compliance; and applicable safety/EMC test reports from a recognised laboratory. CE, FCC or equivalent may be accepted as supporting evidence.	
13	Sensor	CMOS image sensor of 1/2.8-inch or larger, with at least 8 effective megapixels and native 4K output capability.	
14	Lens	OEM-standard motorised lens providing at least 12x optical zoom, with wide-end aperture of F1.8 or better. Focal-length/aperture range shall be declared.	
15	Field of View (FOV)	Diagonal field of view of at least 75° at the widest position; horizontal and vertical FOV shall be declared.	
16	Video Format	Through USB/UVC, support 4K at a minimum of 30 fps using MJPEG and/or H.264/H.265; YUY2 or equivalent uncompressed output shall be supported at applicable resolutions.	
17	Optical Zoom	At least 12x optical zoom.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
18	Digital Zoom	At least 12x digital zoom; higher zoom may be offered.	
19	AI Features	AI-based auto/group framing and presenter or subject tracking. Equivalent OEM terminology and additional tracking modes shall be accepted.	
20	Minimum Illumination	Minimum illumination of 0.5 lux or lower at the widest available aperture with AGC enabled; test condition shall be declared.	
21	Shutter	Electronic shutter range covering at least 1/30 second to 1/10,000 second, or wider.	
22	White Balance	Automatic and manual white balance, including one-push and indoor/outdoor presets or equivalent modes.	
23	Backlight Compensation	Backlight compensation shall be supported.	
24	Digital Noise Reduction	2D and/or 3D digital noise reduction, or equivalent OEM image-noise-reduction technology.	
25	Signal-to-Noise Ratio (SNR)	Video signal-to-noise ratio of at least 50 dB.	
26	Pan Angle	Horizontal pan range of at least ±170°.	
27	Tilt Angle	Vertical tilt range from at least -30° to +90°, or wider.	
28	Pan Speed	Variable pan speed with a maximum speed of at least 30°/second; complete range shall be declared.	
29	Tilt Speed	Variable tilt speed with a maximum speed of at least 25°/second; complete range shall be declared.	
30	Image Flip	Horizontal and/or vertical image flip shall be supported for the proposed mounting arrangement.	
31	Preset Positions	At least 100 programmable PTZ preset positions.	
32	Video Compression	H.264 and MJPEG compression shall be supported; H.265 or a later industry-standard codec may be offered additionally.	
33	Video Stream	At least two independently configurable IP video streams.	
34	First Stream Resolution	Primary stream shall support 3840×2160 and configurable lower resolutions including 1920×1080 and 1280×720.	
35	Second Stream Resolution	Secondary stream shall support 1920×1080 and/or 1280×720, with additional lower resolutions as per OEM design.	
36	Video Bit Rate	Configurable video bit rate with an upper limit of at least 20 Mbps; full supported range shall be declared.	
37	Frame Rate	Configurable frame rate up to at least 25 fps in 50 Hz mode and 30 fps in 60 Hz mode, including 4K at 30 fps.	
38	Audio Compression	AAC and/or another widely supported audio codec such as G.711/G.722, compatible with the proposed VC/streaming system.	
39	Audio Bit Rate	Configurable audio bit rate appropriate to the offered codec; for AAC, support shall include at least 96–256 kbps or equivalent quality.	
40	Protocols	Mandatory: TCP/IP, HTTP/HTTPS, RTSP, RTMP/RTMPS, DHCP and ONVIF. SRT, NDI, GB/T 28181 and multicast shall be required only where used by the approved architecture; optional licences shall be identified.	
41	USB Interface	At least one USB 3.0 or higher UVC interface. Type-C, Type-B or Type-A is acceptable with required cable/adaptor supplied.	
42	HD Output	At least one HDMI output supporting 4K at 30 fps or higher.	
43	Network Interface	At least one RJ45 Ethernet interface supporting 10/100 Mbps or higher. Gigabit and PoE/PoE+ shall be specified separately only where required by the network design.	
44	Audio Interface	At least one line/microphone audio input; 3.5 mm or an equivalent professional connector is acceptable.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
45	Control Interface	At least one industry-standard control interface using RS-232, RS-485 and/or IP. VISCA, Pelco-D/P or an equivalent documented protocol shall be acceptable; required cables shall be supplied.	
46	Power Interface	Power through OEM-supplied DC input and/or PoE/USB as supported. All required power supplies/injectors shall be included.	
47	Accessory	Remote control and suitable wall-mount kit, including installation hardware, shall be supplied.	
48	Certifications	Certification: BIS/Indian-standard compliance wherever legally applicable shall be mandatory. RoHS compliance/declaration and applicable safety/EMC test reports from a BIS-recognized, NABL-accredited or ILAC-signatory laboratory shall be accepted. CE, FCC, CB or equivalent may be submitted as optional supporting evidence and are not separately mandatory.	

Item No. 75: 20 – 30 Seaters (Option 2)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Package	All-in-one conferencing bar integrating panoramic and close-up imaging channels, microphones and speakers. A dual-lens or functionally equivalent multi-camera architecture is acceptable.	
2	Camera Type	Integrated wide-angle/panoramic and PTZ/close-up imaging channels, using dual lenses or an equivalent multi-sensor architecture.	
3	Camera Resolution	Minimum camera output of 3840×2160 at 30 fps, with support for 1920×1080 and 1280×720.	
4	Sensor	Focused/PTZ camera: CMOS sensor of 1/2.8-inch or larger with at least 8 effective megapixels.	
5	Optical Zoom	At least 12x optical zoom for the focused/PTZ camera.	
6	Lens Focal Length	OEM-standard motorised lens providing at least 12x optical zoom, with wide-end aperture of F1.8 or better. Focal-length range shall be declared.	
7	Horizontal Field of View	Focused camera horizontal FOV of at least 65° at the widest position; tele-end FOV shall be declared.	
8	Vertical Field of View	Focused camera vertical FOV of at least 38° at the widest position; tele-end FOV shall be declared.	
9	Pan Range	Focused camera horizontal pan range of at least ±90°.	
10	Tilt Range	Focused camera total vertical tilt range of at least 40°.	
11	Pan Speed	Variable pan speed with maximum speed of at least 60°/second; complete range shall be declared.	
12	Tilt Speed	Variable tilt speed with maximum speed of at least 15°/second; complete range shall be declared.	
13	Mechanical PTZ	The focused/close-up imaging channel shall use mechanical PTZ for physical pan, tilt and optical zoom.	
14	Image Enhancements	Backlight compensation, 2D/3D or equivalent noise reduction, horizontal/vertical flip and image freeze.	
15	Number of Preset Positions	At least 100 programmable PTZ presets, with repeatability/accuracy of 0.5° or better.	
16	Signal-to- Noise Ratio	Video signal-to-noise ratio of at least 50 dB.	
17	Focus	Automatic focus shall be supported.	
18	White Balance	Automatic and manual white balance, including indoor/outdoor and one-push presets or equivalent modes.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
19	Sensor	Panoramic camera: CMOS sensor of 1/2.8-inch or larger with at least 8 effective megapixels.	
20	Optical Lens	Fixed or variable wide-angle lens suitable for panoramic room coverage. Focal length shall be declared rather than prescribed.	
21	Diagonal Field of View	Panoramic camera diagonal FOV of at least 110°.	
22	Horizontal Field of View	Panoramic camera horizontal FOV of at least 100°.	
23	Vertical Field of View	Panoramic camera vertical FOV of at least 65°.	
24	EPTZ	Electronic PTZ shall be supported for the panoramic camera.	
25	Built-in Microphone	Built-in beamforming microphone array. Element count shall be OEM-designed and declared, while pickup performance shall govern compliance.	
26	Audio Pickup Range	Effective built-in audio pickup range of at least 6 metres, extendable to at least 8 metres using extension microphones.	
27	Speaker	Integrated full-range speaker system suitable for a 20– 30 seat room. Speaker count, rated power and SPL shall be declared.	
28	Sampling Rate	Microphone sampling rate of at least 32 kHz and speaker/audio playback sampling rate of at least 48 kHz.	
29	Audio Algorithms	Acoustic echo cancellation, automatic gain control and automatic noise suppression, or equivalent advanced audio processing.	
30	Extended Mic Support	Support for extension microphones through USB, Ethernet/PoE or another secure OEM-standard interface; all required cables/injectors shall be supplied.	
31	Auto Framing	AI-based auto/group framing using face, body and/or audio cues.	
32	Speaker Tracking	AI-based active-speaker tracking.	
33	Smart Gallery	Multi-person gallery framing or an equivalent function that presents individual close-up views of multiple participants.	
34	Multi-Camera Director	Where required by the approved room design, support an external/front camera and automatic/manual layout switching. Any licences or accessories shall be included.	
35	Color Space/Compression	H.264 and MJPEG compression, together with YUY2/NV12 or an equivalent UVC-compatible uncompressed format.	
36	USB Video Communication Protocol	UVC 1.1 or later for video and UAC 1.0 or later for audio.	
37	USB	At least one USB 3.0 or higher UVC/UAC interface. Type-C, Type-B or Type-A is acceptable with supplied cables; an additional USB host port may be provided.	
38	HDMI	At least one HDMI output supporting the required 4K format.	
39	Network Ports	Sufficient Ethernet interfaces for network A/V and extension-microphone connectivity. RJ45/PoE or equivalent OEM network architecture is acceptable; required injectors/switching shall be included.	
40	BYOM & BYOD Support	BYOM/BYOD capability for wireless presentation and access to the room camera, microphones and speakers. One compatible dongle/receiver and required licences shall be supplied from day one.	
41	Remote Control	IR, RF/2.4 GHz or Bluetooth remote control shall be supplied.	
42	Dimensions (W x H x D)	Overall dimensions without bracket shall be declared and shall be suitable for the proposed display and room layout; exact catalogue dimensions shall not be mandatory.	
43	Dimensions (with bracket)	Overall dimensions with the supplied bracket shall be declared and verified against the approved installation layout.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
44	Operating Temperature	Operating temperature range of at least 0°C to 40°C.	
45	Storage Temperature	Storage temperature range of at least -20°C to +60°C, or wider.	
46	Security	Kensington lock slot or equivalent physical anti-theft provision.	
47	Power Input	Power through OEM-supplied DC input and/or PoE. All required power supplies, injectors and cables shall be included.	
48	Microphone Type	Compatible digital array/extension microphone for the offered conferencing bar/system.	
49	Microphone Array	OEM-designed omnidirectional/beamforming microphone array providing 360° pickup. Element count shall be declared but shall not determine compliance by itself.	
50	Pickup Distance	Effective pickup radius of at least 3 metres per extension microphone.	
51	Sensitivity	Microphone sensitivity shall be declared and shall support clear speech capture across the stipulated 3-metre radius; test conditions shall be provided.	
52	Signal Noise Ratio	Signal-to-noise ratio of at least 60 dB(A).	
53	Frequency Response	Microphone frequency response covering at least 100 Hz–16 kHz, or wider.	
54	Sampling Rate	Audio sampling rate of at least 32 kHz.	
55	Audio Processing Features	Acoustic echo cancellation, automatic noise suppression and automatic gain control, or equivalent processing.	
56	Cascade Mode	Microphones shall support cascading through PoE/Ethernet or another secure OEM-standard digital interface.	
57	Cascade Capability	The solution shall support cascading at least four microphones and shall be scalable up to six where required by the approved room layout. Necessary PoE/injector power shall be included.	
58	Network Interface	Daisy-chain upstream/downstream digital network interfaces using RJ45 or another secure OEM-standard connector.	
59	USB Interface	USB 2.0 or higher interface for configuration/direct audio as applicable. Type-C, Type-B or Type-A is acceptable with supplied cable.	
60	Analog Audio	At least one analog audio input and one analog audio output; 3.5 mm, balanced or equivalent professional connectors are acceptable.	
61	Power Input	Power through IEEE 802.3af/at PoE and/or USB 5 V as supported. Required PoE injectors/power supplies shall be included.	
62	System	USB/UAC plug-and-play compatibility with current supported versions of Windows, macOS and Linux.	
63	Installation Method	Suitable hardware for desktop, wall and ceiling mounting shall be available; the required mounting accessories shall be supplied.	

Item No. 76: 30 – 40 Seaters

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Sensor	CMOS image sensor of 1/2.8-inch or larger, with at least 8 effective megapixels and native 4K output capability.	
2	Lens	OEM-standard motorised zoom lens providing at least 20x optical zoom, with wide-end aperture of F1.8 or better. The bidder shall declare focal-length and aperture ranges.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
3	Diagonal FOV	Diagonal field of view of at least 65° at the widest zoom position.	
4	Horizontal FOV	Horizontal field of view of at least 58° at the widest zoom position. Tele-end field of view shall be declared by the bidder.	
5	Vertical FOV	Vertical field of view of at least 33° at the widest zoom position. Tele-end field of view shall be declared by the bidder.	
6	Video Format	Through USB/UVC, the camera shall support 4K at a minimum of 30 fps using MJPEG and/or H.264/H.265. YUY2 or equivalent uncompressed format shall be supported at applicable resolutions.	
7	Signal System	Minimum supported modes: 3840×2160 at 25/30 fps and 1920×1080 at 25/30 fps, or higher frame-rate equivalents.	
8	Scanning Mode	Progressive scanning.	
9	Optical Zoom	At least 20x optical zoom.	
10	Digital Zoom	At least 12x digital zoom; higher zoom may be offered.	
11	AI Feature	The camera shall provide AI-based auto/group framing and presenter or subject tracking. Equivalent OEM terminology and additional tracking modes shall be acceptable.	
12	Minimum Illumination	Minimum illumination of 0.5 lux or lower, measured at the widest available aperture with AGC enabled. Test conditions shall be declared.	
13	Shutter	Electronic shutter range covering at least 1/30 second to 1/10,000 second, or wider.	
14	White Balance	Automatic and manual white balance, including one-push and indoor/outdoor presets or equivalent scene modes.	
15	Backlight Compensation	Backlight compensation shall be supported.	
16	Digital Noise Reduction	2D and/or 3D digital noise reduction, or an equivalent OEM image-noise-reduction technology.	
17	SNR	Video signal-to-noise ratio of at least 50 dB, or better.	
18	Pan Angle	Horizontal pan range of at least ±170°.	
19	Tilt Angle	Vertical tilt ranges from at least -30° to +90°, or wider.	
20	Pan Speed	Variable pan speed with a maximum speed of at least 30°/second. The complete speed range shall be declared.	
21	Tilt Speed	Variable tilt speed with a maximum speed of at least 25°/second. The complete speed range shall be declared.	
22	Image Flip	Horizontal and/or vertical image flip shall be supported as required for the proposed mounting arrangement.	
23	Preset Position	At least 100 programmable PTZ preset positions.	
24	Video Compression	H.264 and MJPEG compression shall be supported. H.265 or a later industry-standard codec may be offered additionally.	
25	Video Stream	At least two independently configurable IP video streams.	
26	First Stream Resolution	Primary stream shall support 3840×2160 and configurable lower resolutions including 1920×1080 and 1280×720.	
27	Second Stream Resolution	Secondary stream shall support 1920×1080 and/or 1280×720, with additional lower resolutions as per OEM design.	
28	Video Bit Rate	Configurable video bit rate with an upper limit of at least 20 Mbps. The supported range shall be declared by the bidder.	
29	Bit Rate Control	Both variable bit rate (VBR) and constant bit rate (CBR) modes shall be supported.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
30	Frame Rate	Configurable frame rate up to at least 25 fps in 50 Hz mode and 30 fps in 60 Hz mode, including 4K at 30 fps.	
31	Audio Compression	AAC and/or another widely supported audio codec such as G.711/G.722, with compatibility for the proposed VC/streaming system.	
32	Audio Bit Rate	Configurable audio bit rate appropriate to the offered codec; for AAC, support shall include at least the 96–256 kbps range or equivalent quality.	
33	Protocols	Mandatory: TCP/IP, HTTP/HTTPS, RTSP, RTMP/RTMPS, DHCP and ONVIF. SRT, NDI, GB/T 28181 and multicast shall be required only where used by the approved system architecture; optional licences shall be separately identified.	
34	USB Interface	At least one USB 3.0 or higher interface supporting UVC. Type-C, Type-B or Type-A connectors are acceptable with the required cable/adaptor supplied.	
35	HD Output	At least one HDMI output supporting 4K at 30 fps or higher.	
36	Network Interface	At least one RJ45 Ethernet interface supporting 10/100 Mbps or higher. Gigabit Ethernet shall be required only where justified by the network design. PoE/PoE+ may be specified separately if required.	
37	Audio Interface	At least one audio input suitable for line-level or microphone audio; 3.5 mm or an equivalent professional connector is acceptable.	
38	Control Interface	At least one industry-standard remote-control interface using RS-232, RS-485 and/or IP control. VISCA, Pelco-D/P or an equivalent documented/open control protocol shall be acceptable. Required connectors and cables shall be supplied.	
39	Accessory	IR/wireless remote control and suitable wall-mount kit, including installation hardware, shall be supplied as standard.	
40	Certifications	BIS registration/Indian-standard compliance wherever legally applicable under prevailing Indian regulations; RoHS compliance; and applicable safety/EMC test reports from a recognised laboratory. CE, FCC, CB or equivalent certificates may be accepted as supporting evidence where relevant.	
41	Microphone Array	All-in-one full-duplex speakerphone with USB wired and Bluetooth wireless connectivity. Microphone-array design shall be OEM-specific but must meet the stipulated 360° pickup and coverage performance.	
42	Audio Quality	Full-duplex wideband audio with a sampling rate of at least 48 kHz and acoustic echo cancellation suitable for the proposed room. Echo-tail performance shall be declared; 300 ms or higher, or proven equivalent, is acceptable.	
43	Voice Pickup Range	360° voice pickup with an effective radius of at least 5 metres, extendable to at least 6 metres using the supplied extension microphones.	
44	Battery	Built-in rechargeable battery providing at least 12 hours of talk time and 30 days of standby under OEM-declared test conditions. Battery capacity shall be declared.	
45	Audio Processing	Acoustic echo cancellation, noise suppression/reduction and automatic gain control, or equivalent advanced audio-processing functions.	
46	Controls	Dedicated controls for microphone mute/unmute, speaker volume and call/Bluetooth operation, with clear LED or LCD status indication. Echo cancellation may be automatic and need not have a separate switch.	
47	Bluetooth Version	Bluetooth 5.0 or later.	
48	Dual Call Support	Where operationally required, the unit shall support call bridging/mixing between a USB-connected PC conference call and one mobile connection through Bluetooth and/or 3.5 mm audio.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
49	Power Supply	The device shall operate from USB bus power and/or its rechargeable battery. USB-C or USB Type-B is acceptable, and all required cables shall be supplied. No separate power adaptor shall be necessary during normal USB operation.	
50	External Microphones	The speakerphone shall support and be supplied with two extension microphones, each having at least 2 metres of pickup coverage. RJ9, RJ45 or another secure OEM-standard interface is acceptable; required cables shall be supplied.	
51	Mobile Connectivity	Mobile-device connectivity through Bluetooth 5.0 or later and/or a 3.5 mm audio interface. If analog mobile-call bridging is operationally mandatory, a 3.5 mm interface shall be provided.	
52	Certifications	Certification: BIS/Indian-standard compliance wherever legally applicable shall be mandatory. RoHS compliance/declaration and applicable safety/EMC test reports from a BIS-recognized, NABL-accredited or ILAC-signatory laboratory shall be accepted. CE, FCC, CB or equivalent may be submitted as optional supporting evidence and are not separately mandatory.	

Item No. 77: All in One BYOD Video Bar for Small Room

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Package	All-in-one BYOD video bar with integrated 4K camera, microphones and speakers. It shall support laptop/PC-based conferencing and future multipoint conferencing through compatible software, hardware or a standards-based conferencing service. Future upgrade components/licences shall be declared separately.	
2	Supported Audio & Video Standard	USB Video Class (UVC) and USB Audio Class (UAC) plug-and-play compatibility.	
3	Supported Operating System	Compatible with current supported mainstream desktop/laptop operating systems through standard UVC/UAC interfaces. Bidder shall declare supported operating systems and versions.	
4	Camera	Integrated UHD 3840 × 2160 camera. At least 12 MP sensor, or an equivalent imaging arrangement delivering the specified 4K output and automatic speaker/group framing. Minimum 5x digital/electronic zoom, horizontal field of view of at least 120° and vertical field of view of at least 95°. Automatic speaker/group overview or equivalent framing shall be supported.	
5	Microphone	At least four built-in microphone elements, or an equivalent beamforming array providing the specified pickup and stereo/full-duplex audio. Voice pickup of at least 3 metres (approximately 10 feet). Support at least one compatible external/extension microphone for wider coverage. Built-in acoustic echo cancellation.	
6	Interfaces	At least one USB Type-C connection for camera, speaker and microphone access and supported content sharing. The video bar shall connect to a display and laptop/PC for standard software conferencing; supplied adapters/accessories may be used. At least one HDMI input supporting 3840 × 2160 at 30 fps and 1920 × 1080 at 60 fps. At least two HDMI outputs supporting 3840 × 2160 at 60 fps. At least one expansion microphone input. Bluetooth and dual-band Wi-Fi supporting 802.11a/b/g/n/ac or later compatible standards.	
7	Audio Features	Built-in background-noise suppression.	
8	Security	IEEE 802.1X network authentication support.	
9	Management & Scalability	Future centralized cloud-based management capability for device monitoring and inventory at individual and central locations, through compatible software from any provider. Future H.323 and SIP calling capability through supported software/hardware upgrades or an interoperable gateway. Required future components, licences and subscriptions shall be declared separately.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
10	Warranty	Three years comprehensive onsite warranty for the complete interoperable solution from commissioning/acceptance. The bidder shall provide a single point of contact for integration, warranty coordination and support across all supplied components.	

Item No. 78: All in One Video Conferencing Endpoint for Huddle to Small Room

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Package	All-in-one video-conferencing appliance integrating microphone, speaker, codec and 4K camera, supplied with a compatible touch-screen control panel. Dedicated appliance-based processing with H.323 and SIP support; a separate general-purpose PC shall not be required for standard endpoint operation. Fully compatible components from different manufacturers shall be accepted.	
2	Video Standards	H.263 and H.264 video compression, with H.323 and SIP communication support.	
3	Video Frame Rate	Minimum 1920 × 1080 at 30 fps.	
4	Video Features	Simultaneous transmission and reception of camera video and presentation content in one call. H.239 and BFCP dual-stream support. Wireless presentation sharing from supported laptop and mobile operating systems, using interoperable wireless casting or a compatible supplied presentation accessory. All components required for the specified functionality shall be included.	
5	Video Output	At least two HDMI outputs for simultaneous video and content on separate displays, supporting up to 4K at 30 fps.	
6	Video Input	At least one HDMI input for PC/laptop presentation content, supporting 4K at 30 fps and 1080p at 60 fps. Presentation viewing/sharing up to UHD 4K at 15 fps.	
7	Audio standards supported	G.711, G.722, G.722.1, G.729, AAC-LD and Opus audio codec support.	
8	Desirable Audio Features	Desirable audio functions: noise suppression, automatic gain control, acoustic echo cancellation and audio/video lip synchronization. Full-duplex operation and spatial audio or equivalent directional audio reproduction. Automatic device pairing/proximity detection may use ultrasound or another compatible method.	
9	Audio Inputs	Built-in microphone array providing voice pickup of at least 3 metres (approximately 10 feet), without requiring a tabletop microphone for normal small-room operation. At least one expansion microphone input and one compatible microphone supplied from day one. Acoustic echo cancellation for each input.	
10	Audio Outputs	Built-in loudspeaker suitable for conferencing in the specified room.	
11	Camera	Integrated 4K camera with at least 10 MP sensor or an equivalent imaging arrangement delivering the specified output/framing performance. Minimum 5x digital zoom. Horizontal field of view of at least 110° and vertical field of view of at least 90°. Automatic active-speaker detection, participant/group framing and automatic switching between speaker and group views. Speaker tracking shall be user-selectable and capable of being disabled.	
12	Multisite Features	Future upgrade capability for at least four simultaneous sites (one local and three remote) at 720p, 30 fps in continuous-presence mode. The capability may be provided by an integrated function or an interoperable multipoint bridge/service. It shall support individual site layouts, mixed H.323/SIP/VoIP participants, per-site rate matching/transcoding, H.264 video, encryption and dual-stream presentation from any site using H.239/BFCP at up to 1080p, 30 fps. Required future licences, hardware and recurring charges shall be declared separately.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
13	Network Interfaces	At least one 10/100/1000 Mbps full-duplex Ethernet LAN interface.	
14	Bandwidth	H.323/SIP point-to-point call bandwidth support up to at least 6 Mbps.	
15	H.323/ IP Features	Differentiated-services QoS, adaptive bandwidth/flow control, URI dialling, H.245 DTMF signalling and IPv4/IPv6 support from day one.	
16	Management	Secure system administration using HTTPS and SSH, directly or through an included compatible management interface.	
17	User Interface	Supplied touch-screen panel for directory/contact search, speaker-tracking control, layout selection, mute/unmute and volume adjustment. Support room temperature, humidity, air-quality and ambient-light information using built-in or compatible sensors. Support lighting, blinds and air-conditioning control through documented interfaces/APIs. Required compatible integration components shall be declared.	
18	Menu Control	Password-protected system configuration and administration menus.	
19	Encryption of video call	Standards-based AES encryption for IP video calls and dual-stream presentations, with automatic key generation and exchange. End-to-end encryption shall be supported between compatible endpoints. Authorized administrators shall be able to control encryption settings subject to the supported meeting-service security policy.	
20	Directory services	Local and centralized/global directories with LDAP and H.350 support, provided directly or through a compatible directory integration component. All components required for the specified directory functionality shall be included.	
21	USB Passthrough	USB audio/video passthrough to a laptop/PC using standard UVC/UAC interfaces, directly or through a supplied compatible adapter. The supplied camera, microphone and room display shall be usable with standard software conferencing clients. Supply a working USB connection of at least 4 metres using USB 2.0 or higher. Active extension, optical USB or compatible adapters may be used where required to maintain the specified operation; all required cables, adapters and power supplies shall be included.	
22	Cloud Meeting Integration	Cloud meeting-service connection through direct room integration, SIP/H.323 or a compatible gateway/service. Equivalent integration architectures shall be accepted. Future room-account, gateway and subscription licences shall be identified and quoted separately.	
23	Cloud Meeting Interoperability	H.323/SIP calling and interoperability with major cloud meeting services through supported standards or compatible gateways, without restarting the device to join meetings. Required gateways/accessories and future activation/subscription licences shall be declared separately.	
24	Centralized Management	Future centralized cloud management for inventory, device health/status, configuration and device/meeting-utilization dashboards. Compatible software from any provider is acceptable. Required future licences, subscriptions and integration components shall be declared separately.	
25	Warranty	Three years comprehensive onsite warranty for the complete interoperable solution from commissioning/acceptance. The bidder shall provide a single point of contact for integration, warranty coordination and support across all supplied components.	

Item No. 79: All in One Video Conferencing Endpoint for Small to Medium Room

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Package	All-in-one video-conferencing appliance integrating microphone, speaker, codec and 4K camera, supplied with a compatible touch-screen control panel. Dedicated appliance-based processing with H.323 and SIP support; a separate general-purpose PC shall not be required for standard endpoint operation. Fully compatible components from different manufacturers shall be accepted.	
2	Video Standards	H.264 and H.265 video compression, with H.323 and SIP communication support.	
3	Video Frame Rate	Minimum 1920 × 1080 at 30 fps.	
4	Video Features	Simultaneous transmission and reception of camera video and presentation content in one call. H.239 and BFCP dual-stream support. Wireless presentation sharing from supported laptop and mobile operating systems, using interoperable wireless casting or a compatible supplied presentation accessory. All components required for the specified functionality shall be included.	
5	Video Output	At least two HDMI outputs for simultaneous video and content on separate displays, supporting up to 4K at 60 fps.	
6	Video Input	At least one HDMI digital presentation input; a DVI input with supplied compatible adapter is also acceptable. Input support up to 4K at 30 fps and 1080p at 60 fps. Presentation sharing at least 1080p at 30 fps.	
7	Audio standards supported	G.711, G.722, G.722.1 and MPEG-4 AAC-LD audio codec support, including AAC-LD operation at 64 kbps.	
8	Desirable Audio Features	Desirable audio functions: noise suppression, automatic gain control, acoustic echo cancellation and audio/video lip synchronization.	
9	Audio Inputs	Built-in microphone array providing voice pickup of at least 3 metres (approximately 10 feet), without requiring a tabletop microphone for normal operation. Support connection of at least two expansion microphones and supply one compatible microphone from day one. Acoustic echo cancellation for each input.	
10	Audio Outputs	Built-in loudspeaker suitable for conferencing in the specified room.	
11	Camera	4K imaging with wide-angle/group and participant close-up views. A dual-camera arrangement with 48 MP or higher sensors, or an equivalent single/multi-camera imaging arrangement meeting the specified 4K output, zoom and framing performance, shall be accepted. Minimum 5x zoom. Wide-angle field of view of at least 110° horizontal and 90° vertical. Close-up-view field of view shall be declared. Motorized tilt covering at least -2° to +20°, or equivalent electronic framing within the stated view. Automatic active-speaker detection, participant/group framing and automatic switching between speaker and group views. Speaker tracking shall be user-selectable and capable of being disabled. Automatic participant framing shall support at least four simultaneous participant views, reduce unused space and preserve the relative left-to-right order of participants. Single-camera, multi-camera or equivalent image-processing implementations shall be acceptable; no named framing mode or prescribed camera count is mandatory.	
12	Multisite Features	Future upgrade capability for at least four simultaneous sites (one local and three remote) at 720p, 30 fps in continuous-presence mode. The capability may be provided by an integrated function or an interoperable multipoint bridge/service. It shall support individual site layouts, mixed H.323/SIP/VoIP participants, per-site rate matching/transcoding, H.264 video, encryption and dual-stream presentation from any site using H.239/BFCP at up to 1080p, 30 fps. Required future licences, hardware and recurring charges shall be declared separately.	
13	Network Interfaces	At least one 10/100/1000 Mbps full-duplex Ethernet LAN interface.	
14	Bandwidth	H.323/SIP point-to-point call bandwidth support up to at least 6 Mbps.	
15	Network Capabilities	Packet-loss handling and adaptive reduction of call bandwidth, with recovery as network conditions improve.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
16	H.323/ IP Features	Differentiated-services QoS, adaptive bandwidth/flow control, URI dialling, H.245 DTMF signalling and IPv4/IPv6 support from day one. Automatic NAT support.	
17	Management	Secure system administration using HTTPS and SSH, directly or through an included compatible management interface.	
18	User Interface	Supplied touch-screen panel for directory/contact search, speaker-tracking control, layout selection, mute/unmute and volume adjustment. Support room temperature, humidity, air-quality and ambient-light information using built-in or compatible sensors. Support lighting, blinds and air-conditioning control through documented interfaces/APIs. Required compatible integration components shall be declared.	
19	Menu Control	Password-protected system configuration and administration menus.	
20	Encryption of video call	Standards-based AES encryption for IP video calls and dual-stream presentations, with automatic key generation and exchange. End-to-end encryption shall be supported between compatible endpoints. Authorized administrators shall be able to control encryption settings subject to the supported meeting-service security policy.	
21	Directory services	Local and centralized/global directories with LDAP and H.350 support, provided directly or through a compatible directory integration component. All components required for the specified directory functionality shall be included.	
22	USB Passthrough	USB audio/video passthrough to a laptop/PC using standard UVC/UAC interfaces, directly or through a supplied compatible adapter. The supplied camera, microphone and room display shall be usable with standard software conferencing clients. Supply a working USB connection of at least 9 metres using USB 3.0 or higher. Active extension, optical USB or compatible adapters may be used where required to maintain the specified operation; all required cables, adapters and power supplies shall be included.	
23	Cloud Meeting Integration	Cloud meeting-service connection through direct room integration, SIP/H.323 or a compatible gateway/service. Equivalent integration architectures shall be accepted. Future room-account, gateway and subscription licences shall be identified and quoted separately.	
24	Cloud Meeting Interoperability	H.323/SIP calling and interoperability with major cloud meeting services through supported standards or compatible gateways, without restarting the device to join meetings. Required gateways/accessories and future activation/subscription licences shall be declared separately.	
25	Centralized Management	Future centralized cloud management for inventory, device health/status, configuration and device/meeting-utilization dashboards. Compatible software from any provider is acceptable. Required future licences, subscriptions and integration components shall be declared separately.	
26	Warranty	Three years comprehensive onsite warranty for the complete interoperable solution from commissioning/acceptance. The bidder shall provide a single point of contact for integration, warranty coordination and support across all supplied components.	

Item No. 80: Video Conferencing Endpoint with Speaker Tracking Camera for Large Room

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Package	Dedicated video-conferencing codec supporting Full HD calls, supplied with a separate 4K speaker-tracking camera system, one omnidirectional microphone and compatible touch-screen control panel. Hardware appliance operation without requiring a separate general-purpose PC. Single-camera or multi-camera solutions shall be acceptable where they meet the specified tracking/framing performance. Fully compatible components from different manufacturers shall be accepted.	
2	Video Standards	H.264 and H.265 video compression; additional higher-efficiency standards may be offered. H.323 and SIP communication support.	
3	Video Frame Rate	Minimum 1920 × 1080 at 60 fps.	
4	Video Features	Simultaneous transmission and reception of camera video and presentation content in one call. H.239 and BFCP dual-stream support. Wireless presentation sharing from supported laptop and mobile operating systems, using interoperable wireless casting or a compatible supplied presentation accessory. All components required for the specified functionality shall be included.	
5	Video Input	At least one HDMI camera input and two additional HDMI inputs for laptop/PC/camera presentation sources. Inputs shall support 4K at 30 fps and 1080p at 60 fps. Presentation sharing shall support 1080p at 30 fps and 4K at 15 fps. At least one USB Type-C content input supporting 1080p at 30 fps and 4K at 15 fps. Supply a USB Type-C-compatible 4K presentation connection of at least 8 metres; compatible active cables/adapters may be used and shall be included.	
6	Video Output	At least two HDMI outputs for simultaneous video and content on separate displays, supporting up to 4K at 60 fps. A third display output for a chairperson content monitor is desirable. When outside a VC call, the two displays shall be able to show content from two separate presentation sources.	
7	Audio standards supported	G.711, G.722, G.722.1 and MPEG-4 AAC-LD audio codec support, including AAC-LD operation at 64 kbps.	
8	Desirable Audio Features	Desirable audio functions: noise suppression, automatic gain control, acoustic echo cancellation and audio/video lip synchronization for each microphone input.	
9	Audio Inputs	Support at least three independently processed table microphones, directly or through supplied compatible expansion interfaces. Each microphone shall have a mute control. Supply one omnidirectional microphone from day one. Voice pickup of at least 3 metres (approximately 10 feet) and acoustic echo cancellation for each input.	
10	Audio Outputs	Audio output for connection to a compatible room loudspeaker/audio system.	
11	Camera	4K UHD speaker-tracking camera system with at least 7x zoom and at least 80° horizontal field of view. Suitable for a conference-room depth of approximately 9 metres (30 feet). Automatic active-speaker detection, participant/group framing and automatic switching between speaker and group views. Speaker tracking shall be user-selectable and capable of being disabled. Automatic participant framing shall support at least four simultaneous participant views, reduce unused space and preserve the relative left-to-right order of participants. Single-camera, multi-camera or equivalent image-processing implementations shall be acceptable; no named framing mode or prescribed camera count is mandatory. Participant-count information shall be available for room-utilization reporting. Camera and codec shall be fully interoperable; no fixed camera count or common manufacturer is mandatory.	
12	Network Interfaces	At least one 10/100/1000 Mbps full-duplex Ethernet LAN interface.	
13	Bandwidth	H.323/SIP point-to-point call bandwidth support up to at least 6 Mbps.	
14	Network Capabilities	Packet-loss handling and adaptive reduction of call bandwidth, with recovery as network conditions improve.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
15	H.323/ IP Features	Differentiated-services QoS, adaptive bandwidth/flow control, URI dialling, H.245 DTMF signalling and IPv4/IPv6 support from day one. Automatic NAT support. Automatic gatekeeper discovery and packet-loss recovery using standards-based or interoperable mechanisms.	
16	Menu Control	Password-protected system configuration and administration menus.	
17	Encryption of video call	Standards-based AES encryption for IP video calls and dual-stream presentations, with automatic key generation and exchange. End-to-end encryption shall be supported between compatible endpoints. Authorized administrators shall be able to control encryption settings subject to the supported meeting-service security policy.	
18	Management	Secure system administration using HTTPS and SSH, directly or through an included compatible management interface.	
19	Directory services	Local and centralized/global directories with LDAP and H.350 support, provided directly or through a compatible directory integration component. All components required for the specified directory functionality shall be included.	
20	Multipoint Capability	Future upgrade capability for at least four simultaneous sites (one local and three remote) at 720p, 30 fps in continuous-presence mode. The capability may be provided by an integrated function or an interoperable multipoint bridge/service. It shall support individual site layouts, mixed H.323/SIP/VoIP participants, per-site rate matching/transcoding, H.264 video, encryption and dual-stream presentation from any site using H.239/BFCP at up to 1080p, 30 fps. Required future licences, hardware and recurring charges shall be declared separately.	
21	User Interface	Supplied touch-screen panel for directory/contact search, speaker-tracking control, layout selection, mute/unmute and volume adjustment. Support room temperature, humidity, air-quality and ambient-light information using built-in or compatible sensors. Support lighting, blinds and air-conditioning control through documented interfaces/APIs. Required compatible integration components shall be declared. The panel shall also permit selection between at least two presentation sources and initiation of wireless sharing.	
22	USB Passthrough	USB audio/video passthrough to a laptop/PC using standard UVC/UAC interfaces, directly or through a supplied compatible adapter. The supplied camera, microphone and room display shall be usable with standard software conferencing clients. Supply a working USB connection of at least 9 metres using USB 3.0 or higher. Active extension, optical USB or compatible adapters may be used where required to maintain the specified operation; all required cables, adapters and power supplies shall be included.	
23	Cloud Meeting Integration	Cloud meeting-service connection through direct room integration, SIP/H.323 or a compatible gateway/service. Equivalent integration architectures shall be accepted. Future room-account, gateway and subscription licences shall be identified and quoted separately.	
24	Cloud Meeting Interoperability	H.323/SIP calling and interoperability with major cloud meeting services through supported standards or compatible gateways, without restarting the device to join meetings. Required gateways/accessories and future activation/subscription licences shall be declared separately.	
25	Centralized Management	Future centralized cloud management for inventory, device health/status, configuration and device/meeting-utilization dashboards. Compatible software from any provider is acceptable. Required future licences, subscriptions and integration components shall be declared separately.	
26	Warranty	Three years comprehensive onsite warranty for the complete interoperable solution from commissioning/acceptance. The bidder shall provide a single point of contact for integration, warranty coordination and support across all supplied components.	

Item No. 81: Video Conferencing Endpoint with PTZ Camera for Large Room

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Package	Dedicated video-conferencing codec supporting Full HD calls, supplied with a separate 4K PTZ camera, one omnidirectional microphone and compatible touch-screen control panel. Hardware appliance operation without requiring a separate general-purpose PC. Fully compatible components from different manufacturers shall be accepted.	
2	Video Standards	H.264 and H.265 video compression; additional higher-efficiency standards may be offered. H.323 and SIP communication support.	
3	Video Frame Rate	Minimum 1920 × 1080 at 60 fps.	
4	Video Features	Simultaneous transmission and reception of camera video and presentation content in one call. H.239 and BFCP dual-stream support. Wireless presentation sharing from supported laptop and mobile operating systems, using interoperable wireless casting or a compatible supplied presentation accessory. All components required for the specified functionality shall be included.	
5	Video Input	At least one HDMI camera input and two additional HDMI inputs for laptop/PC/camera presentation sources. Inputs shall support 4K at 30 fps and 1080p at 60 fps. Presentation sharing shall support 1080p at 30 fps and 4K at 15 fps. At least one USB Type-C content input supporting 1080p at 30 fps and 4K at 15 fps. Supply a USB Type-C-compatible 4K presentation connection of at least 8 metres; compatible active cables/adapters may be used and shall be included.	
6	Video Output	At least two HDMI outputs for simultaneous video and content on separate displays, supporting up to 4K at 60 fps. A third display output for a chairperson content monitor is desirable. When outside a VC call, the two displays shall be able to show content from two separate presentation sources.	
7	Audio standards supported	G.711, G.722, G.722.1 and MPEG-4 AAC-LD audio codec support, including AAC-LD operation at 64 kbps.	
8	Desirable Audio Features	Desirable audio functions: noise suppression, automatic gain control, acoustic echo cancellation and audio/video lip synchronization for each microphone input.	
9	Audio Inputs	Support at least three independently processed table microphones, directly or through supplied compatible expansion interfaces. Each microphone shall have a mute control. Supply one omnidirectional microphone from day one. Voice pickup of at least 3 metres (approximately 10 feet) and acoustic echo cancellation for each input.	
10	Audio Outputs	Audio output for connection to a compatible room loudspeaker/audio system.	
11	Camera	4K UHD PTZ camera with automatic presenter/subject tracking. Pan range of at least ±170° and tilt range covering at least -20° to +90°. Minimum 10x optical zoom and 5x digital zoom. HDMI or Ethernet/IP video interface compatible with the supplied codec. Camera and codec shall be operable through the supplied common touch panel, without requiring components from a common manufacturer.	
12	Network Interfaces	At least one 10/100/1000 Mbps full-duplex Ethernet LAN interface.	
13	Bandwidth	H.323/SIP point-to-point call bandwidth support up to at least 6 Mbps.	
14	Network Capabilities	Packet-loss handling and adaptive reduction of call bandwidth, with recovery as network conditions improve.	
15	H.323/ IP Features	Differentiated-services QoS, adaptive bandwidth/flow control, URI dialling, H.245 DTMF signalling and IPv4/IPv6 support from day one. Automatic NAT support. Automatic gatekeeper discovery and packet-loss recovery using standards-based or interoperable mechanisms.	
16	Menu Control	Password-protected system configuration and administration menus.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
17	Encryption of video call	Standards-based AES encryption for IP video calls and dual-stream presentations, with automatic key generation and exchange. End-to-end encryption shall be supported between compatible endpoints. Authorized administrators shall be able to control encryption settings subject to the supported meeting-service security policy.	
18	Management	Secure system administration using HTTPS and SSH, directly or through an included compatible management interface.	
19	Directory services	Local and centralized/global directories with LDAP and H.350 support, provided directly or through a compatible directory integration component. All components required for the specified directory functionality shall be included.	
20	Multipoint Capability	Future upgrade capability for at least four simultaneous sites (one local and three remote) at 720p, 30 fps in continuous-presence mode. The capability may be provided by an integrated function or an interoperable multipoint bridge/service. It shall support individual site layouts, mixed H.323/SIP/VoIP participants, per-site rate matching/transcoding, H.264 video, encryption and dual-stream presentation from any site using H.239/BFCP at up to 1080p, 30 fps. Required future licences, hardware and recurring charges shall be declared separately.	
21	User Interface	Supplied touch-screen panel for directory/contact search, speaker-tracking control, layout selection, mute/unmute and volume adjustment. Support room temperature, humidity, air-quality and ambient-light information using built-in or compatible sensors. Support lighting, blinds and air-conditioning control through documented interfaces/APIs. Required compatible integration components shall be declared. The panel shall also permit selection between at least two presentation sources and initiation of wireless sharing.	
22	USB Passthrough	USB audio/video passthrough to a laptop/PC using standard UVC/UAC interfaces, directly or through a supplied compatible adapter. The supplied camera, microphone and room display shall be usable with standard software conferencing clients. Supply a working USB connection of at least 9 metres using USB 3.0 or higher. Active extension, optical USB or compatible adapters may be used where required to maintain the specified operation; all required cables, adapters and power supplies shall be included.	
23	Cloud Meeting Integration	Cloud meeting-service connection through direct room integration, SIP/H.323 or a compatible gateway/service. Equivalent integration architectures shall be accepted. Future room-account, gateway and subscription licences shall be identified and quoted separately.	
24	Cloud Meeting Interoperability	H.323/SIP calling and interoperability with major cloud meeting services through supported standards or compatible gateways, without restarting the device to join meetings. Required gateways/accessories and future activation/subscription licences shall be declared separately.	
25	Centralized Management	Future centralized cloud management for inventory, device health/status, configuration and device/meeting-utilization dashboards. Compatible software from any provider is acceptable. Required future licences, subscriptions and integration components shall be declared separately.	
26	Warranty	Three years comprehensive onsite warranty for the complete interoperable solution from commissioning/acceptance. The bidder shall provide a single point of contact for integration, warranty coordination and support across all supplied components.	

Item No. 82: Integrated USB All in One Video Conferencing Device for Small Room

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	Built-in Microphones	At least six built-in digital microphone elements, or an equivalent microphone array meeting the stipulated pickup, beamforming and audio-performance requirements. The bidder shall declare the microphone-array configuration.	
2	Built-in Speaker	Integrated conferencing loudspeaker.	
3	Built-in Camera	Integrated camera with electronic pan, tilt and zoom.	
4	Mounting Options	Multiple mounting options suitable for the proposed room installation, with compatible mounting accessories supplied.	
5	Cable Management	Cable routing, retention and strain relief to prevent accidental disconnection.	
6	Digital Pan	Electronic pan range of at least ±48° at 4x zoom, or wider.	
7	Digital Tilt	Electronic tilt range of at least ±32° at 4x zoom, or wider.	
8	Digital Zoom	At least 4x digital/electronic zoom.	
9	Diagonal Field of View	At least 120° diagonal field of view at the widest position.	
10	Horizontal Field of View	At least 113° horizontal field of view at the widest position.	
11	Vertical Field of View	At least 80° vertical field of view at the widest position.	
12	Camera Resolution	Minimum UHD 3840 × 2160 (4K) output.	
13	Speaker Construction	Conferencing loudspeaker with a suitable driver/enclosure design meeting the specified sound output and distortion limits. No particular driver diameter, enclosure construction or patented suspension design is mandatory.	
14	Speaker Sensitivity	Nominal speaker sensitivity of at least 83 dB SPL at 1 W, measured at 1 metre, with measurement tolerance up to ±2 dB. Test conditions shall be declared.	
15	Speaker Power	Rated loudspeaker output of at least 8 W.	
16	Speaker Distortion	Total harmonic distortion below 2% at 1 W and 1 kHz.	
17	Speaker Sampling Rate	48 kHz audio sampling or higher.	
18	Speaker Impedance	Speaker impedance shall be matched to the supplied amplifier. Impedance shall be declared; a fixed 4-ohm architecture is not mandatory.	
19	Microphone Frequency Response	Frequency response covering at least 90 Hz–16 kHz.	
20	Microphone Sensitivity	Nominal microphone sensitivity of -36 dBFS or higher at 1 Pa, with tolerance declared. Equivalent sensitivity specifications using another measurement reference shall be accepted with supporting test data demonstrating the required pickup performance.	
21	Microphone Sampling Rate	48 kHz digital microphone audio sampling or higher.	
22	Microphone Pickup Range	Rated voice-pickup distance of at least 7 metres under declared test conditions. The bidder shall declare coverage, room conditions and microphone configuration.	
23	Microphone Beamforming	Adaptive beamforming using omnidirectional digital microphones or an equivalent array providing the stipulated voice pickup and noise rejection. Microphone technology, element count and beam count shall be declared; no fixed MEMS construction or beam arrangement is mandatory.	
24	Echo Cancellation	Acoustic echo cancellation shall be supported.	
25	Voice Activity Detection	Voice activity detection shall be supported.	
26	Noise Suppression	Intelligent background-noise suppression using AI-based processing or an equivalent denoising method.	
27	HDMI Output	At least one HDMI output.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
28	HDMI Input	At least one HDMI input.	
29	USB Interface	At least one USB Type-C interface supporting USB 3.1 or higher, with required cable supplied.	
30	Network Interface	10/100/1000 Mbps Ethernet connectivity.	
31	Wi-Fi	Wi-Fi supporting IEEE 802.11a/b/g/n/ac or later compatible standards.	
32	Bluetooth	Bluetooth with low-energy functionality.	
33	Stored-data Encryption	File/data encryption using AES-128 or stronger.	
34	Data Security	Symmetric-key encryption and public-key infrastructure support for secure data exchange and authentication.	
35	Device Identity	Device identity protected through device attestation or an equivalent cryptographic authentication mechanism.	
36	Device Access	Authenticated access to device-management APIs/interfaces.	
37	Key Protection	Security keys shall be held in protected storage, with hardware-backed isolation or an equivalent secure execution/storage mechanism. No particular processor-vendor technology or proprietary secure-storage implementation is mandatory.	
38	Physical Security	Security-cable locking slot or an equivalent physical anti-theft anchoring provision.	
39	Power Supply	Automatic-sensing power supply suitable for the complete device.	
40	Power Input	Operation from 100–240 V AC through a supplied compatible power adaptor. Required DC output voltage, current rating and maximum consumption shall be declared; exact adaptor output ratings are not mandatory.	
41	Power Adaptor Form Factor	Compact power adaptor suitable for the proposed installation. Dimensions shall be declared; exact catalogue dimensions are not mandatory.	
42	DC Power Cable	DC power cable of at least 3 metres, compatible with the supplied device/adaptor.	
43	USB Cable	USB Type-C to Type-C cable supporting USB 3.0 or higher, at least 3 metres long.	

Item No. 83: Integrated USB Video Conferencing System for 25 or More Seats

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	USB Plug and Play	USB plug-and-play camera compliant with UVC 1.1 or later compatible versions.	
2	Video Output Formats	YUY2 and MJPEG output formats.	
3	Resolution and Frame Rate	At least 8 effective megapixels. Output support for 3840 × 2160 at 30 fps, 1920 × 1080 at 60 fps, and 1280 × 720 at 30/60 fps.	
4	Image Sensor	CMOS sensor of 1/2.5-inch optical format or larger, or an equivalent imaging arrangement meeting the specified resolution and image quality.	
5	USB Connectivity	USB 3.0 or higher connection to the host/end device.	
6	Video Signal to Noise Ratio	Video SNR of at least 38 dB, with test conditions declared.	
7	Camera Field of View	At the widest position: at least 90° diagonal, 83° horizontal and 52° vertical field of view.	
8	Lens Aperture	Motorized zoom lens with wide-end aperture of F2.0 or better. The complete aperture range shall be declared; an exact F2.0–F3.1 lens design is not mandatory.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
9	Lens Focal Length	Motorized lens meeting the specified optical zoom and field of view. Wide-end and tele-end focal lengths shall be declared; exact catalogue focal lengths are not mandatory.	
10	Focus	Autofocus shall be supported.	
11	Motorized PTZ	Smooth motorized pan, tilt and zoom controlled through the supplied remote.	
12	Software Camera Control	Camera control through a compatible application on supported mainstream desktop/laptop operating systems. Required software shall be supplied.	
13	Far-end Camera Control	Far-end camera control through an interoperable mechanism supported by the conferencing application.	
14	Zoom	At least 5x optical zoom and 10x digital zoom.	
15	Camera Control Interface	Documented serial, USB or IP camera-control interface using an interoperable protocol. Connector type shall be declared and all required cables/adapters supplied; a fixed six-pin connector is not mandatory.	
16	Pan and Tilt Range	Pan range of at least ±90° and tilt range covering at least -90° to +50°, or wider.	
17	Minimum Illumination	Minimum operating illumination of 80 lux or lower. Test conditions shall be declared.	
18	Camera Presets	At least three user-programmable camera presets.	
19	Physical Security	Security-cable locking slot or an equivalent physical anti-theft anchoring provision.	
20	Tripod Mounting	Provision for mounting the camera on a compatible tripod.	
21	Camera Accessories	Supply the required power adaptor, Indian-compatible power plugs, cables of at least 3 metres and suitable mounting bracket.	
22	Microphone Supply and Expansion	Supply two compatible conferencing microphones from day one. Support future expansion by at least five additional microphones, operating as one integrated solution. Compatible supplied expansion interfaces may be used; required future components shall be declared separately.	
23	Microphone Pickup Coverage	Each microphone shall provide voice-pickup coverage of at least 4.5 metres diameter under declared test conditions.	
24	Microphone Array	Omnidirectional/beamforming microphone array providing the stipulated coverage and voice isolation. Element and beam counts shall be declared; no fixed four-element/eight-beam arrangement is mandatory.	
25	Echo Cancellation	Acoustic echo cancellation shall be supported.	
26	Voice Activity Detection	Voice activity detection shall be supported.	
27	Noise Suppression	Background-noise suppression shall be supported.	
28	Microphone Mute Control	Microphone mute button with clear LED/status indication.	
29	Microphone Frequency Response	Frequency response covering at least 90 Hz–16 kHz.	
30	Microphone Sensitivity	Microphone sensitivity at 1 Pa shall be declared with its measurement reference, tolerance and test conditions. Supporting specifications/test data shall demonstrate the stipulated voice-pickup and frequency-response performance.	
31	Microphone Extension	Support extension of one or more microphones up to at least 50 metres using compatible cables/extension components. Required components and supported topology shall be declared.	
32	Microphone Sampling Rate	48 kHz digital microphone audio sampling or higher.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
33	Speaker Supply	Supply two compatible conferencing loudspeaker/speakerphone units from day one.	
34	Speaker Power Arrangement	Speakers shall be powered through the integrated system or compatible low-voltage connection. Where additional power interfaces are needed, include all accessories and provide a managed installation with minimal exposed cabling.	
35	Speaker Driver	High-performance conferencing loudspeaker driver meeting the specified sound output and distortion limits. Driver size shall be declared; a fixed 76 mm diameter is not mandatory.	
36	Speaker Mounting	Wall-mounting provision with compatible mounting accessories.	
37	Speaker Sound Output	Nominal output of at least 95 dB SPL at 1 W and 100 dB SPL at 7.5 W, measured at 0.5 metre, with measurement tolerance up to ±2 dB. Higher output at equal or lower input power is acceptable; test conditions shall be declared.	
38	Speaker Sensitivity	Nominal sensitivity of at least 95 dB SPL at 0.5 metre, with measurement tolerance up to ±2 dB. Input power and test conditions shall be declared.	
39	Speaker Distortion	At 7.5 W: distortion below 2.5% over 200–300 Hz and below 1% over 300 Hz–10 kHz, or equivalent/lower distortion at a sound-output level meeting the stipulated performance.	
40	Speaker Sampling Rate	48 kHz audio sampling or higher.	
41	Dual Display Support	Capability to connect and operate two room displays.	
42	Presentation Transport	Support HDMI and VGA presentation sources at the table and transport the signal to a display up to at least 50 metres away, directly or through compatible supplied converters/extenders. All components required for the specified function shall be included.	
43	Host Connection Cable	Host/end-device connection cable of at least 3 metres, compatible with the offered system and supported laptops, desktops, codecs or thin clients.	
44	Included Accessories	All required component cables, power adaptors, Indian-compatible power plugs, mounting brackets and quick-start documentation shall be supplied as a complete interoperable package.	
45	Remote Control Type	RF/Bluetooth or equivalent non-line-of-sight remote control with removable/replaceable batteries.	
46	Remote Control Functions	Common remote control for pan, tilt, zoom, presets and video mute/block functions.	
47	Remote Control Range	Operating range of at least 8.5 metres.	

Item No. 84: Integrated USB All in One Video Conferencing Device with Speaker Tracking

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	USB Plug and Play	USB plug-and-play camera compliant with UVC 1.1 or later compatible versions.	
2	Video Output Formats	YUY2 and MJPEG output formats.	
3	Resolution and Frame Rate	At least 8 effective megapixels. Output support for 4K, 1440p, 1080p, 900p, 720p and standard-definition video at 30 fps.	
4	Image Sensor	CMOS sensor of 1/2.5-inch optical format or larger, or an equivalent imaging arrangement meeting the specified resolution and image quality.	
5	USB Ports	At least three USB Type-A ports and one USB Type-C port supporting USB 3.0 or higher. Ports may be provided through an integrated or supplied compatible interface.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
6	Video Signal to Noise Ratio	Video SNR of at least 38 dB, with test conditions declared.	
7	Camera Field of View	At the widest position: at least 90° diagonal, 82° horizontal and 52° vertical field of view.	
8	Aperture and Room Coverage	Wide-end aperture of F2.0 or better. Effective room coverage of at least 130° horizontally and 80° vertically through the camera/PTZ or an equivalent imaging arrangement. The bidder shall declare the aperture range, coverage and measurement method.	
9	Lens Focal Length	Lens/imaging arrangement meeting the specified zoom, field of view and room coverage. Focal-length range shall be declared; exact catalogue focal lengths are not mandatory.	
10	Automatic Camera Functions	Autofocus, active-speaker tracking and automatic participant/group framing.	
11	Motorized PTZ	Smooth motorized pan, tilt and zoom controlled through the supplied remote.	
12	Software Camera Control	Camera control through a compatible application on supported mainstream desktop/laptop operating systems. Required software shall be supplied.	
13	Far-end Camera Control	Far-end camera control through an interoperable mechanism supported by the conferencing application.	
14	Zoom	At least 15x total usable zoom. Optical, digital or combined implementation is acceptable. Optical and digital zoom factors and output resolution across the zoom range shall be declared.	
15	Camera Control	Camera control through the supplied remote.	
16	Pan and Tilt Range	Pan range of at least ±90° and tilt range covering at least -90° to +50°, or wider.	
17	Minimum Illumination	Minimum operating illumination of 80 lux or lower. Test conditions shall be declared.	
18	Camera Presets	At least one user-programmable camera preset.	
19	Tracking and Framing Modes	Active-speaker tracking, group framing, participant grid view, speaker view with room overview and configurable camera/framing zones. Single-camera, dual-camera or equivalent imaging arrangements meeting these functions shall be accepted; no named proprietary mode or fixed camera count is mandatory.	
20	Physical Security	Security-cable locking slot or an equivalent physical anti-theft anchoring provision.	
21	Mounting Options	Suitable wall, tabletop and display/TV mounting options, with compatible accessories supplied for the selected installation.	
22	Camera Accessories	Supply the required power adaptor, Indian-compatible power plugs, cables of at least 3 metres and suitable mounting bracket.	
23	Microphone Supply and Expansion	Built-in microphone array with at least six elements, or an equivalent array meeting the specified pickup performance. Support at least four additional external microphones in future, with built-in and external microphones operating simultaneously. Compatible expansion interfaces may be used; required future components shall be declared separately.	
24	Microphone Pickup Coverage	Voice-pickup coverage of at least 7 metres diameter under declared test conditions.	
25	External Microphone Design	External microphones shall provide omnidirectional/beamforming coverage with effective voice isolation and support ceiling/pendant mounting through compatible accessories. Element and beam counts shall be declared; no fixed four-element/eight-beam architecture is mandatory.	
26	Echo Cancellation	Acoustic echo cancellation shall be supported.	
27	Voice Activity Detection	Voice activity detection shall be supported.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
28	Noise Suppression	Background-noise suppression shall be supported.	
29	Microphone Mute Control	Microphone mute button with clear LED/status indication.	
30	Microphone Frequency Response	Frequency response covering at least 90 Hz–16 kHz.	
31	Microphone Sensitivity	Nominal microphone sensitivity of -36 dBFS or higher at 1 Pa, with tolerance declared. Equivalent specifications using another measurement reference shall be accepted with supporting test data demonstrating the required pickup performance.	
32	External Microphone Extension	Support extension of one or more external microphones up to at least 50 metres using compatible cables/extension components. Required components and supported topology shall be declared.	
33	Microphone Sampling Rate	48 kHz digital microphone audio sampling or higher.	
34	Speaker Sensitivity	Nominal sensitivity of at least 90 dB SPL at 1 W, measured at 0.5 metre, with measurement tolerance up to ±3 dB. Test conditions shall be declared.	
35	Speaker Power Arrangement	Speakers shall be powered through the integrated system or compatible low-voltage connection. Where additional power interfaces are needed, include all accessories and provide a managed installation with minimal exposed cabling.	
36	Speaker Construction	Integrated speaker arrangement suitable for the specified sound output and distortion limits. Driver count and size shall be declared; no fixed two-driver/70 mm construction is mandatory.	
37	Speaker Sound Output	Nominal output of at least 90 dB SPL at 1 W and 99 dB SPL at 8 W, measured at 0.5 metre, with measurement tolerance up to ±2 dB. Higher output at equal or lower input power is acceptable; test conditions shall be declared.	
38	Speaker Sampling Rate	48 kHz audio sampling or higher.	
39	Speaker Distortion	Total harmonic distortion below 2% at 1 kHz, with operating/test conditions declared.	
40	Dual Display Support	Capability to connect and operate two room displays.	
41	Appliance and Guest Mode	Built-in conferencing appliance mode with supported meeting applications/services and guest-join capability. Compatible standards-based or gateway-assisted integration is acceptable; no particular application brand is mandatory. Required licences and supported services shall be declared.	
42	Presentation Transport	Support HDMI presentation input at the table and transport the signal to a display up to at least 50 metres away, directly or through compatible supplied extenders. All components required for the specified function shall be included.	
43	Host Connection Cable	USB Type-A to Type-C cable supporting USB 3.0 or higher, at least 2.2 metres long, compatible with supported laptops, desktops, codecs or thin clients. Required compatible adapters shall be included.	
44	Included Accessories	All required component cables, power adaptors, cable-management accessories, Indian-compatible power plugs, mounting brackets and quick-start documentation shall be supplied as a complete interoperable package.	
45	Remote Control Type	RF/Bluetooth or equivalent non-line-of-sight remote control with removable/replaceable batteries.	
46	Remote Control Functions	Common remote control for pan, tilt, zoom, presets and video mute/block functions.	
47	Remote Control Range	Operating range of at least 8.5 metres.	

Item No. 85: 4K PTZ USB Camera

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
1	USB Plug and Play	USB plug-and-play camera compliant with UVC 1.1 or later compatible versions.	
2	Video Output Formats	YUY2 and MJPEG output formats.	
3	Resolution and Frame Rate	At least 8 effective megapixels. Output support for 3840 × 2160 at 30 fps and 1920 × 1080 at 60 fps.	
4	Image Sensor	CMOS sensor of 1/2.5-inch optical format or larger, or an equivalent imaging arrangement meeting the specified resolution and image quality.	
5	USB Connectivity	USB 3.0 or higher connection to the host/end device.	
6	Video Signal to Noise Ratio	Video SNR of at least 38 dB, with test conditions declared.	
7	Camera Field of View	At the widest position: at least 90° diagonal, 82° horizontal and 52° vertical field of view.	
8	Lens Aperture	Motorized zoom lens with wide-end aperture of F2.0 or better. The complete aperture range shall be declared; an exact F2.0–F3.1 lens design is not mandatory.	
9	Lens Focal Length	Motorized lens meeting the specified total zoom and field of view. Wide-end and tele-end focal lengths shall be declared; exact catalogue focal lengths are not mandatory.	
10	Focus	Autofocus shall be supported.	
11	Motorized PTZ	Smooth motorized pan, tilt and zoom controlled through the supplied remote.	
12	Software Camera Control	Camera control through a compatible application on supported mainstream desktop/laptop operating systems. Required software shall be supplied.	
13	Far-end Camera Control	Far-end camera control through an interoperable mechanism supported by the conferencing application.	
14	Zoom	At least 15x total usable zoom. Optical, digital or combined implementation is acceptable. Optical and digital zoom factors and output resolution across the zoom range shall be declared.	
15	Camera Control Interface	Documented serial, USB or IP camera-control interface using an interoperable protocol. Connector type shall be declared and all required cables/adapters supplied; a fixed six-pin connector is not mandatory.	
16	Pan and Tilt Range	Pan range of at least ±90° and tilt range covering at least -90° to +50°, or wider.	
17	Minimum Illumination	Minimum operating illumination of 80 lux or lower. Test conditions shall be declared.	
18	Camera Presets	At least three user-programmable camera presets.	
19	Physical Security	Security-cable locking slot or an equivalent physical anti-theft anchoring provision.	
20	Tripod Mounting	Provision for mounting the camera on a compatible tripod.	
21	Camera Accessories	Supply the required power adaptor, Indian-compatible power plugs, cables of at least 3 metres and suitable mounting bracket.	
22	Host Connection Cable	Host/end-device connection cable of at least 3 metres, compatible with the offered system and supported laptops, desktops, codecs or thin clients.	
23	Included Accessories	All required component cables, power adaptors, Indian-compatible power plugs, mounting brackets and quick-start documentation shall be supplied as a complete interoperable package.	
24	Remote Control Type	RF/Bluetooth or equivalent non-line-of-sight remote control with removable/replaceable batteries.	

Sr. No.	Feature	Minimum Technical Specification	Compliance (Yes/ No)
25	Remote Control Functions	Common remote control for pan, tilt, zoom, presets and video mute/block functions.	
26	Remote Control Range	Operating range of at least 8.5 metres.	

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
1	4	Section-I [Gist of important general conditions (Point No.-4)]	Unless otherwise specified for a part of the order, the supplies should be completed within 5-6 weeks from the date of placing the supply order except for snowbound/ tribal areas, where delivery can be made within 6-8 weeks. Delivery is to be made FOR destination i.e. anywhere in the State of Himachal Pradesh and Installation has to be completed within one week after supply of material. In Remote and snowbound areas delivery may be done at nearest district head quarter, in case the area is cut-off for the time being. The Managing Director, HPSEDC reserves the right to extend the delivery period based on the request of the supplier, wherever required.	As per RFP
2	8	point 11	The average annual turnover of the bidders should be Rs.10 Crores (Rs. Ten Crores) during last 3 years as per audited balance sheets.	Revised Clause: The average annual turnover of the bidder should be atleast Rs. 5 Crores (Rs. Five Crores) during last 3 Financial years as per audited balance sheets.
3	9	2.1 eligible bidders	The annual turnover of the OEM whose equipment are sought to be supplied should be at least Rs 500 Crores for the last 3 years, i.e., for the years 2022-23, 2023-24 and 2024-25. The average annual turnover of the OEM, whose equipment/systems/items are sought to be supplied should be ₹200 Crores during the last 3 years as per audited balance sheets/Annual Reports of Accounts.	Revised Clause: 1. The average annual turnover of the OEM, whose equipment's/ systems/ Items are sought to be supplied should be atleast Rs.200 Crores during last 3 financial years as per audited balance sheets/Annual reports of accounts. 2. The average annual turnover of the OEM, whose OPS equipment's/ systems/ Items are sought to be supplied should be atleast Rs.50 Crores during last 3 financial years as per audited balance sheets/Annual reports of accounts. 3. In respect of OEMs qualifying as Class-I Local Suppliers under the Public Procurement (Preference to Make in India) Order, 2017 (as amended), the minimum annual average turnover requirement shall be Rs. 100 Crores during last 3 financial years, subject to the OEM meeting all other eligibility criteria, including manufacturing capability, quality certifications, product support infrastructure, and technical specifications prescribed in the RFP. NOTE: The Make in India turnover criteria is not applicable to Item No. 69, 70, and 71. However, if a Make in India OEM participates in this tender and quotes for any of these items, the OEM must satisfy the minimum average turnover requirement of Rs 200 crore.
4	10	2.1. Eligible Bidders point no . 7	The average annual turnover of the OEM, whose equipment's/ systems/ Items are sought to be supplied should Rs.200 Crores during last 3 years as per audited balance sheets/Annual reports of accounts.	Revised Clause: 1. The average annual turnover of the OEM, whose equipment's/ systems/ Items are sought to be supplied should be atleast Rs.200 Crores during last 3 financial years as per audited balance sheets/Annual reports of accounts. 2. The average annual turnover of the OEM, whose OPS equipment's/ systems/ Items are sought to be supplied should be atleast Rs.50 Crores during last 3 financial years as per audited balance sheets/Annual reports of accounts. 3. In respect of OEMs qualifying as Class-I Local Suppliers under the Public Procurement (Preference to Make in India) Order, 2017 (as amended), the minimum annual average turnover requirement shall be Rs. 100 Crores during last 3 financial years, subject to the OEM meeting all other eligibility criteria, including manufacturing capability, quality certifications, product support infrastructure, and technical specifications prescribed in the RFP. NOTE: The Make in India turnover criteria is not applicable to Item No. 69, 70, and 71. However, if a Make in India OEM participates in this tender and quotes for any of these items, the OEM must satisfy the minimum average turnover requirement of Rs 200 crore.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
5	10	Point 7	The average annual turnover of the OEM, whose equipment's/ systems/ Items are sought to be supplied should Rs.200 Crores during last 3 years as per audited balance sheets/Annual reports of accounts.	Revised Clause: 1. The average annual turnover of the OEM, whose equipment's/ systems/ Items are sought to be supplied should be atleast Rs.200 Crores during last 3 financial years as per audited balance sheets/Annual reports of accounts. 2. The average annual turnover of the OEM, whose OPS equipment's/ systems/ Items are sought to be supplied should be atleast Rs.50 Crores during last 3 financial years as per audited balance sheets/Annual reports of accounts. 3. In respect of OEMs qualifying as Class-I Local Suppliers under the Public Procurement (Preference to Make in India) Order, 2017 (as amended), the minimum annual average turnover requirement shall be Rs. 100 Crores during last 3 financial years, subject to the OEM meeting all other eligibility criteria, including manufacturing capability, quality certifications, product support infrastructure, and technical specifications prescribed in the RFP. NOTE: The Make in India turnover criteria is not applicable to Item No. 69, 70, and 71. However, if a Make in India OEM participates in this tender and quotes for any of these items, the OEM must satisfy the minimum average turnover requirement of Rs 200 crore.
6	10	Point 5	OEM should have established office in India for more than 10 Years	As per RFP
7	10	2.1. Eligible Bidders point no . 7	The average annual turnover of the OEM, whose equipment's/ systems/ Items are sought to be supplied should Rs.200 Crores during last 3 years as per audited balance sheets/Annual reports of accounts.	Revised Clause: 1. The average annual turnover of the OEM, whose equipment's/ systems/ Items are sought to be supplied should be atleast Rs.200 Crores during last 3 financial years as per audited balance sheets/Annual reports of accounts. 2. The average annual turnover of the OEM, whose OPS equipment's/ systems/ Items are sought to be supplied should be atleast Rs.50 Crores during last 3 financial years as per audited balance sheets/Annual reports of accounts. 3. In respect of OEMs qualifying as Class-I Local Suppliers under the Public Procurement (Preference to Make in India) Order, 2017 (as amended), the minimum annual average turnover requirement shall be Rs. 100 Crores during last 3 financial years, subject to the OEM meeting all other eligibility criteria, including manufacturing capability, quality certifications, product support infrastructure, and technical specifications prescribed in the RFP. NOTE: The Make in India turnover criteria is not applicable to Item No. 69, 70, and 71. However, if a Make in India OEM participates in this tender and quotes for any of these items, the OEM must satisfy the minimum average turnover requirement of Rs 200 crore.
8	10	Section 2 – Instructions to Bidders, A. Introduction, Clause 2.1 – Eligible Bidders, Point No. 7	The average annual turnover of the OEM, whose equipment/systems/items are sought to be supplied should be ₹200 Crores during the last 3 years as per audited balance sheets/Annual Reports of Accounts.	Revised Clause: 1. The average annual turnover of the OEM, whose equipment's/ systems/ Items are sought to be supplied should be atleast Rs.200 Crores during last 3 financial years as per audited balance sheets/Annual reports of accounts. 2. The average annual turnover of the OEM, whose OPS equipment's/ systems/ Items are sought to be supplied should be atleast Rs.50 Crores during last 3 financial years as per audited balance sheets/Annual reports of accounts. 3. In respect of OEMs qualifying as Class-I Local Suppliers under the Public Procurement (Preference to Make in India) Order, 2017 (as amended), the minimum annual average turnover requirement shall be Rs. 100 Crores during last 3 financial years, subject to the OEM meeting all other eligibility criteria, including manufacturing capability, quality certifications, product support infrastructure, and technical specifications prescribed in the RFP. NOTE: The Make in India turnover criteria is not applicable to Item No. 69, 70, and 71. However, if a Make in India OEM participates in this tender and quotes for any of these items, the OEM must satisfy the minimum average turnover requirement of Rs 200 crore.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
9	10	2.1 eligible bidders	EMD submission	As per RFP
10	10	2.1. Eligible Bidders Additional Clause:	15. BIS certification of Interactive Display required for the last 5 years with a manufacturing facility in India and a valid factory license for the same period. The quoted model should be included in the same BIS license; non-compliance shall result the rejection of tender. Interactive Display and OPS should be from same OEM.	As per RFP
11	10	2.1 eligible bidders	The average annual turnover of the OEM, whose equipment/systems/items are sought to be supplied, should be ₹200 Crores during the last three financial years, as per audited balance sheets/annual reports.	Revised Clause: 1. The average annual turnover of the OEM, whose equipment's/ systems/ Items are sought to be supplied should be atleast Rs.200 Crores during last 3 financial years as per audited balance sheets/Annual reports of accounts. 2. The average annual turnover of the OEM, whose OPS equipment's/ systems/ Items are sought to be supplied should be atleast Rs.50 Crores during last 3 financial years as per audited balance sheets/Annual reports of accounts. 3. In respect of OEMs qualifying as Class-I Local Suppliers under the Public Procurement (Preference to Make in India) Order, 2017 (as amended), the minimum annual average turnover requirement shall be Rs. 100 Crores during last 3 financial years, subject to the OEM meeting all other eligibility criteria, including manufacturing capability, quality certifications, product support infrastructure, and technical specifications prescribed in the RFP. NOTE: The Make in India turnover criteria is not applicable to Item No. 69, 70, and 71. However, if a Make in India OEM participates in this tender and quotes for any of these items, the OEM must satisfy the minimum average turnover requirement of Rs 200 crore.
12	10	Eligibility Criteria, S.No. 5	OEM should have an established office in India for more than 10 years.	Revised clause: OEM should have an established office in India for more than 5 years.
13	10	2.1 eligible bidders		As per RFP
14	10	2.1 eligible bidders		As per RFP
15	11	Point 14	The Bidder should already have reasonable support base in this region. The Purchaser's discretion regarding reasonableness of support base shall be final. It is clarified that this clause pertains to only the existing level of support. The actual support required to implement this arrangement has been described in the relevant section.	As per RFP
16	12	Eligibility criteria 2.1	Either OEM or its authorized reseller only can participate in the bid/tender and if both participate in the bid/tender, then the bid of both bidders will not be considered, and both the bids would be technically disqualified. If the OEM authorizes more than one reseller, all the bids of the participating resellers shall be deemed disqualified.	As per RFP

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
17	49	Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom	Diagonal field of view: 75 degrees(W) ~ 8 degrees(T) or bette	Diagonal field of view: At least 71° at the widest position. Horizontal, vertical and tele-end FOV shall be declared by the bidder.
18	49	Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom	Horizontal rotation: 350° (-175° to +175°) or better	Horizontal pan range: At least ±170° (340° total), or wider.
19	49	Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom	vertical rotation: 180° (-90° to +90°) or better	Vertical tilt range: At least -30° to +90°, or wider.
20	49	Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom	Video encoding format: H.264, H.265, MJPEG, YUY2	Video encoding/output: Through USB/UVC, the camera shall support 4K at a minimum of 30 fps using MJPEG and/or H.264/H.265. YUY2 or an equivalent uncompressed output shall be supported at applicable resolutions.
21	49	Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom	Control Interface: RS232(input), RS485, USB3.0 RJ45	Control interface: At least one industry-standard camera-control interface using RS-232, RS-485 and/or IP over RJ45 shall be provided. USB/UVC control is also acceptable where supported. Required protocol documentation and cables/adapters shall be supplied.
22	49	Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom	Diagonal Field-of-View 75 degrees(W) ~ 8 degrees(T) or better	Diagonal field of view: At least 71° at the widest position. Horizontal, vertical and tele-end FOV shall be declared by the bidder.
23	49	Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom	Horizontal Rotation 350° (-175° to +175°) or better	Horizontal pan range: At least ±170° (340° total), or wider.
24	49	Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom	Vertical Rotation 180° (-90° to +90°) or better	Vertical tilt range: At least -30° to +90°, or wider.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
25	49	Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom	Video Encoding Format H.264, H.265, MJPEG, YUY2	Video encoding/output: Through USB/UVC, the camera shall support 4K at a minimum of 30 fps using MJPEG and/or H.264/H.265. YUY2 or an equivalent uncompressed output shall be supported at applicable resolutions.
26	49	Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom	Control Interface RS232(input), RS485, USB3.0 RJ45	Control interface: At least one industry-standard camera-control interface using RS-232, RS-485 and/or IP over RJ45 shall be provided. USB/UVC control is also acceptable where supported. Required protocol documentation and cables/adapters shall be supplied.
27	49	Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom	Vertical Field-of-View 40 degrees(W) ~ 4 degrees(T) or better	Vertical FOV: The bidder shall declare the widest and tele-end vertical FOV. No separate minimum vertical-FOV value is prescribed, subject to compliance with the revised diagonal-FOV requirement and demonstration of suitable conference-room coverage.
28	49	Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom	Horizontal resolution: 350° (-175° to +175°) or better	Horizontal pan range: At least ±170° (340° total), or wider.
29	49	Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom	Vertical resolution: 180° (-90° to +90°) or better	Vertical tilt range: At least -30° to +90°, or wider.
30	49	Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom	Number of presets: User can set up to 255 presets (10 presets on IR remote)	Preset positions: At least 2 user-configurable camera presets, recallable through the supplied remote, controller or software. The total number of supported presets shall be declared; higher OEM-standard capacity is acceptable.
31	49	Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom	Video encoding format: H.264, H.265, MJPEG, YUY2	Video encoding/output: Through USB/UVC, the camera shall support 4K at a minimum of 30 fps using MJPEG and/or H.264/H.265. YUY2 or an equivalent uncompressed output shall be supported at applicable resolutions.
32	49	Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom	Control Interface: RS232(input), RS485, USB3.0 RJ45	Control interface: At least one industry-standard camera-control interface using RS-232, RS-485 and/or IP over RJ45 shall be provided. USB/UVC control is also acceptable where supported. Required protocol documentation and cables/adapters shall be supplied.
33	49	Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom	Video output: USB 3.0, HDMI, RJ45	Video output: At least one digital video output through USB 3.0/UVC or HDMI shall be provided. RJ45/IP video output shall be required where IP streaming is offered. All cables/adapters required for the proposed solution shall be supplied.
34	49	Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom	video streams: 2; Mainstream, Sub stream	Video streams: Where IP streaming is offered, at least one configurable IP video stream shall be supported. Dual main/sub streams may be offered as per OEM design and are not mandatory.
35	49	Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom	Stream resolution: Mainstream: 1920x1080 (Max), Sub Stream:1280x720 (Max)	Stream resolution: For IP streaming, the primary stream shall support at least 1920 × 1080. The supported secondary-stream resolution, if any, shall be as per OEM design and declared by the bidder.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
36	49	Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom	LAN: 1xRJ45, PoE(802.3af)	LAN/PoE: At least 1 × RJ45 Ethernet port. IEEE 802.3af PoE or IEEE 802.3at PoE+ shall be acceptable. Any required injector or power supply shall be included.
37	49	Item No. 3 – 4K Video Conferencing Camera with 12x Optical Zoom	Current consumption: 2A (Max)	Power/current: The bidder shall declare the OEM-rated input voltage, maximum current and maximum power consumption. A fixed 2 A limit is not mandatory; maximum power consumption shall not exceed 24 W, and all required power accessories shall be supplied.
38	50	Item No. 4 – 4K Video Conferencing Camera with 20x Optical Zoom	Diagonal field of view: 60 degrees(W) ~ 4 degrees(T) or better	Diagonal field of view: At least 60° at the widest position. The tele-end diagonal FOV shall be declared by the bidder; a narrower tele-end FOV is acceptable.
39	50	Item No. 4 – 4K Video Conferencing Camera with 20x Optical Zoom	Horizontal rotation: 350° (-175° to +175°) or better	Horizontal pan range: At least ±170° (340° total), or wider.
40	50	Item No. 4 – 4K Video Conferencing Camera with 20x Optical Zoom	vertical rotation: 180° (-90° to +90°) or better	Vertical tilt range: At least -30° to +90°, or wider.
41	50	Item No. 4 – 4K Video Conferencing Camera with 20x Optical Zoom	Video encoding format: H.265, H.264, MJPEG, YUY2	Video encoding/output: Through USB/UVC, the camera shall support 4K at a minimum of 30 fps using MJPEG and/or H.264/H.265. YUY2 or an equivalent uncompressed output shall be supported at applicable resolutions.
42	50	Item No. 4 – 4K Video Conferencing Camera with 20x Optical Zoom	Control Interface: USB 3.0, RS-232 (Input), RS485	Control interface: At least one industry-standard camera-control interface using RS-232, RS-485 and/or IP over RJ45 shall be provided. USB/UVC control is also acceptable where supported. Required protocol documentation and cables/adapters shall be supplied.
43	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	Diagonal field of view: 75 degrees(W) ~ 8 degrees(T) or better	Diagonal field of view: At least 71° at the widest position. Horizontal, vertical and tele-end FOV shall be declared by the bidder.
44	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	Horizontal Rotation: 350° (-175° to +175°) or better	Horizontal pan range: At least ±170° (340° total), or wider.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
45	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	Vertical rotation: 180° (-90° to +90°) or better	Vertical tilt range: At least -30° to +90°, or wider.
46	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	video encoding format: H.264, H.265, MJPEG, YUY2	Video encoding/output: Through USB/UVC, the camera shall support Full HD at the stipulated frame rates using MJPEG and/or H.264/H.265. YUY2 or an equivalent uncompressed output shall be supported at applicable resolutions.
47	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	control interface: RS232(input), RS485, USB3.0 (UVC1.1),RJ45	Control interface: At least one industry-standard camera-control interface using RS-232, RS-485 and/or IP over RJ45 shall be provided. USB/UVC control is also acceptable where supported. Required protocol documentation and cables/adapters shall be supplied.
48	50	Item No. 4 – 4K Video Conferencing Camera with 20x Optical Zoom	Diagonal Field-of-View 60 degrees(W) ~ 4 degrees(T) or better	Diagonal field of view: At least 60° at the widest position. The tele-end diagonal FOV shall be declared by the bidder; a narrower tele-end FOV is acceptable.
49	50	Item No. 4 – 4K Video Conferencing Camera with 20x Optical Zoom	Horizontal Rotation 350° (-175° to +175°) or better	Horizontal pan range: At least ±170° (340° total), or wider.
50	50	Item No. 4 – 4K Video Conferencing Camera with 20x Optical Zoom	Vertical Rotation 180° (-90° to +90°) or better	Vertical tilt range: At least -30° to +90°, or wider.
51	50	Item No. 4 – 4K Video Conferencing Camera with 20x Optical Zoom	Video Encoding Format H.264, H.265, MJPEG, YUY2	Video encoding/output: Through USB/UVC, the camera shall support 4K at a minimum of 30 fps using MJPEG and/or H.264/H.265. YUY2 or an equivalent uncompressed output shall be supported at applicable resolutions.
52	50	Item No. 4 – 4K Video Conferencing Camera with 20x Optical Zoom	Control Interface RS232(input), RS485, USB3.0	Control interface: At least one industry-standard camera-control interface using RS-232, RS-485 and/or IP over RJ45 shall be provided. USB/UVC control is also acceptable where supported. Required protocol documentation and cables/adapters shall be supplied.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
53	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	Diagonal Field-of-View 75 degrees(W) ~ 8 degrees(T) or better	Diagonal field of view: At least 71° at the widest position. Horizontal, vertical and tele-end FOV shall be declared by the bidder.
54	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	Horizontal Rotation 350° (-175° to +175°) or better	Horizontal pan range: At least ±170° (340° total), or wider.
55	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	Vertical Rotation 180° (-90° to +90°) or better	Vertical tilt range: At least -30° to +90°, or wider.
56	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	Video Encoding Format H.264, H.265, MJPEG, YUY2	Video encoding/output: Through USB/UVC, the camera shall support Full HD at the stipulated frame rates using MJPEG and/or H.264/H.265. YUY2 or an equivalent uncompressed output shall be supported at applicable resolutions.
57	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	Control Interface RS232(input), RS485, USB3.0	Control interface: At least one industry-standard camera-control interface using RS-232, RS-485 and/or IP over RJ45 shall be provided. USB/UVC control is also acceptable where supported. Required protocol documentation and cables/adapters shall be supplied.
58	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	Vertical Field-of-View 40 degrees(W) ~ 4 degrees(T) or better	Vertical FOV: The bidder shall declare the widest and tele-end vertical FOV. No separate minimum vertical-FOV value is prescribed, subject to compliance with the revised diagonal-FOV requirement and demonstration of suitable conference-room coverage.
59	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	Horizontal resolution: 350° (-175° to +175°) or better	Horizontal pan range: At least ±170° (340° total), or wider.
60	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	vertical resolution: 180° (-90° to +90°) or better	Vertical tilt range: At least -30° to +90°, or wider.
61	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	number of presets: User can set up to 255 presets (10 presets on IR remote)	Preset positions: At least 2 user-configurable camera presets, recallable through the supplied remote, controller or software. The total number of supported presets shall be declared; higher OEM-standard capacity is acceptable.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
62	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	video signal: 1080p@60/50/30/25fps, 720p@60/50/30/25fps	Video signal: 1920 × 1080 at 60/50/30/25 fps and 1280 × 720 at 60/50/30/25 fps, or higher/equivalent supported modes.
63	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	video encoding format: H.264, H.265, MJPEG, YUY2	Video encoding/output: Through USB/UVC, the camera shall support Full HD at the stipulated frame rates using MJPEG and/or H.264/H.265. YUY2 or an equivalent uncompressed output shall be supported at applicable resolutions.
64	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	control interface: RS232, RS485, USB3.0 (UVC1.1), RJ45	Control interface: At least one industry-standard camera-control interface using RS-232, RS-485 and/or IP over RJ45 shall be provided. USB/UVC control is also acceptable where supported. Required protocol documentation and cables/adapters shall be supplied.
65	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	video output: USB 3.0, HDMI, RJ45	Video output: At least one digital video output through USB 3.0/UVC or HDMI shall be provided. RJ45/IP video output shall be required where IP streaming is offered. All required cables/adapters shall be supplied.
66	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	video streams: 2; Mainstream, Sub stream	Video streams: Where IP streaming is offered, at least one configurable IP video stream shall be supported. Dual main/sub streams may be offered as per OEM design and are not mandatory.
67	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	stream resolution: Mainstream: 1920x1080 (Max), Sub Stream:1280x720 (Max)	Stream resolution: For IP streaming, the primary stream shall support at least 1920 × 1080. The supported secondary-stream resolution, if any, shall be as per OEM design and declared by the bidder.
68	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	LAN: 1xRJ45, PoE(802.3af)	LAN/PoE: At least 1 × RJ45 Ethernet port. IEEE 802.3af PoE or IEEE 802.3at PoE+ shall be acceptable. Any required injector or power supply shall be included.
69	50	Item No. 5 – Full HD Video Conferencing Camera with 12x Optical Zoom	current consumption: 2A (Max)	Power/current: The bidder shall declare the OEM-rated input voltage, maximum current and maximum power consumption. A fixed 2 A limit is not mandatory; maximum power consumption shall not exceed 24 W, and all required power accessories shall be supplied.
70	51	Item No. 6 – Full HD Video Conferencing Camera with 20x Optical Zoom	diagonal field of view: 60 degrees(W) ~ 4 degrees(T) or better	Diagonal field of view: At least 60° at the widest position. The tele-end diagonal FOV shall be declared by the bidder; a narrower tele-end FOV is acceptable.
71	51	Item No. 6 – Full HD Video Conferencing Camera with 20x Optical Zoom	horizontal rotation: 350° (-175° to +175°) or better	Horizontal pan range: At least ±170° (340° total), or wider.
72	51	Item No. 6 – Full HD Video Conferencing Camera with 20x Optical Zoom	vertical rotation: 180° (-90° to +90°) or better	Vertical tilt range: At least -30° to +90°, or wider.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
73	51	Item No. 6 – Full HD Video Conferencing Camera with 20x Optical Zoom	video encoding format: H.265, H.264, MJPEG, YUY2	Video encoding/output: Through USB/UVC, the camera shall support Full HD at the stipulated frame rates using MJPEG and/or H.264/H.265. YUY2 or an equivalent uncompressed output shall be supported at applicable resolutions.
74	51	Item No. 6 – Full HD Video Conferencing Camera with 20x Optical Zoom	control interface: USB 3.0, RS-232 (Input), RS485	Control interface: At least one industry-standard camera-control interface using RS-232, RS-485 and/or IP over RJ45 shall be provided. USB/UVC control is also acceptable where supported. Required protocol documentation and cables/adapters shall be supplied.
75	51	Item No. 6 – Full HD Video Conferencing Camera with 20x Optical Zoom	Diagonal Field-of-View 60 degrees(W) ~ 4 degrees(T) or better	Diagonal field of view: At least 60° at the widest position. The tele-end diagonal FOV shall be declared by the bidder; a narrower tele-end FOV is acceptable.
76	51	Item No. 6 – Full HD Video Conferencing Camera with 20x Optical Zoom	Horizontal Rotation 350° (-175° to +175°) or better	Horizontal pan range: At least ±170° (340° total), or wider.
77	51	Item No. 6 – Full HD Video Conferencing Camera with 20x Optical Zoom	Vertical Rotation 180° (-90° to +90°) or better	Vertical tilt range: At least -30° to +90°, or wider.
78	51	Item No. 6 – Full HD Video Conferencing Camera with 20x Optical Zoom	Video Encoding Format H.264, H.265, MJPEG, YUY2	Video encoding/output: Through USB/UVC, the camera shall support Full HD at the stipulated frame rates using MJPEG and/or H.264/H.265. YUY2 or an equivalent uncompressed output shall be supported at applicable resolutions.
79	51	Item No. 6 – Full HD Video Conferencing Camera with 20x Optical Zoom	Control Interface RS232(input), RS485, USB3.0	Control interface: At least one industry-standard camera-control interface using RS-232, RS-485 and/or IP over RJ45 shall be provided. USB/UVC control is also acceptable where supported. Required protocol documentation and cables/adapters shall be supplied.
80	52	Item No. 7 – Wireless Speakerphone with 4 Array Mic	Sensitivity: 26dBFS or better	Microphone sensitivity shall be declared with the applicable test conditions; no fixed -26 dBFS value is mandatory. The offered device shall provide clear 360° speech pickup over the stipulated coverage range.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
81	52	Item No. 7 – Wireless Speakerphone with 4 Array Mic	Connectivity: USB Type C and Bluetooth V5.2 or better	Connectivity: USB 2.0 or higher and Bluetooth 5.0 or later. USB Type-A, Type-B or Type-C shall be acceptable, with the required cable/adaptor supplied.
82	52	Item No. 7 – Wireless Speakerphone with 4 Array Mic	Control interface: USB 3.0, RS-232 (Input), RS485	Clause revised: Connectivity interface shall be USB 2.0 or higher for audio/data. RS-232 and RS-485 are not required for this speakerphone. The required USB cable/adaptor shall be supplied.
83	52	Item No. 7 – Wireless Speakerphone with 4 Array Mic	Video Output: USB 3.0, HDMI	The Video Output clause is deleted for this item.
84	52	Item No. 7 – Wireless Speakerphone with 4 Array Mic	Storage Temparature: 20° to 60° degrees Celsius	Storage temperature: The supported range shall cover at least 0°C to +50°C; a wider OEM-specified range is acceptable.
85	52	Item No. 7 – Wireless Speakerphone with 4 Array Mic	Sensitivity -26dBFS or better	Microphone sensitivity shall be declared with the applicable test conditions; no fixed -26 dBFS value is mandatory. The offered device shall provide clear 360° speech pickup over the stipulated coverage range.
86	52	Item No. 7 – Wireless Speakerphone with 4 Array Mic	Connectivity USB Type C and Bluetooth V5.2 or better	Connectivity: USB 2.0 or higher and Bluetooth 5.0 or later. USB Type-A, Type-B or Type-C shall be acceptable, with the required cable/adaptor supplied.
87	52	Item No. 7 – Wireless Speakerphone with 4 Array Mic	Control Interface USB 3.0, RS-232 (Input), RS485	Clause revised: Connectivity interface shall be USB 2.0 or higher for audio/data. RS-232 and RS-485 are not required for this speakerphone. The required USB cable/adaptor shall be supplied.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
88	52	Item No. 7 – Wireless Speakerphone with 4 Array Mic	Video Output USB 3.0, HDMI	The Video Output clause is deleted for this item.
89	52	Item No. 7 – Wireless Speakerphone with 4 Array Mic	Storage Temperature -20° to 60° degrees Celsius	Storage temperature: The supported range shall cover at least 0°C to +50°C; a wider OEM-specified range is acceptable.
90	52	Item No. 7 – Wireless Speakerphone with 4 Array Mic	10. Control Interface: USB 3.0, RS-232 (Input), RS485	Clause revised: Connectivity interface shall be USB 2.0 or higher for audio/data. RS-232 and RS-485 are not required for this speakerphone. The required USB cable/adaptor shall be supplied.
91	52	Item No. 7 – Wireless Speakerphone with 4 Array Mic	11. Video Output USB 3.0, HDMI	The Video Output clause is deleted for this item.
92	52	Item No. 7 - Wireless Speakerphone	10. Control Interface: USB 3.0, RS-232 (Input), RS485	Clause revised: Connectivity interface shall be USB 2.0 or higher for audio/data. RS-232 and RS-485 are not required for this speakerphone. The required USB cable/adaptor shall be supplied.
93	52	Item No. 7 : Wireless Speakerphone - Video output	11. Video Output USB 3.0, HDMI	The Video Output clause is deleted for this item.
94	52	Item No. 7 – Wireless Speakerphone with 4 Array Mic	The specification mentions RS-232 and RS-485 under the control interface, along with USB 3.0.	Clause revised: Connectivity interface shall be USB 2.0 or higher for audio/data. RS-232 and RS-485 are not required for this speakerphone. The required USB cable/adaptor shall be supplied.
95	52	Item No. 7 – Wireless Speakerphone with 4 Array Mic	Video Output – USB 3.0, HDMI.	The Video Output clause is deleted for this item.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
96	53	Item No. 8 – Wireless Speakerphone with 8 Array Mic	Sensitivity: minus 26dBFS +/-1dB @ 1Pa	Microphone sensitivity shall be declared with the applicable test conditions; no fixed -26 dBFS value is mandatory. The offered device shall provide clear 360° speech pickup over the stipulated coverage range.
97	53	Item No. 8 – Wireless Speakerphone with 8 Array Mic	Frequency response: 90Hz – 16kHz	Microphone frequency response shall cover at least 100 Hz to 16 kHz; an equal or wider OEM-specified range is acceptable.
98	53	Item No. 8 – Wireless Speakerphone with 8 Array Mic	Number of speakers	Integrated speaker system: One or more built-in speakers using an OEM-designed configuration, capable of full-duplex conferencing and meeting the stipulated frequency/output performance. The configuration shall be declared.
99	53	Item No. 8 – Wireless Speakerphone with 8 Array Mic	Speakers: 2" Main unit with 0.75" tweeter	The fixed speaker-driver size/configuration requirement is deleted. The bidder shall declare the offered speaker design and demonstrate compliance with the revised frequency and output requirements.
100	53	Item No. 8 – Wireless Speakerphone with 8 Array Mic	Speaker power: Minimum 15 Watt with 10-Watt (base) & 5-Watt (tweeter) or better	Speaker output: Total rated speaker power shall be at least 5 W, or the offered unit shall demonstrate equivalent sound-pressure output suitable for the intended room. Rated power and test conditions shall be declared.
101	53	Item No. 8 – Wireless Speakerphone with 8 Array Mic	Connectivity: USB Type C, Wireless USB Dongle and Bluetooth V5.2 or better	Connectivity: USB 2.0 or higher wired connection and Bluetooth 5.0 or later. USB Type-A, Type-B or Type-C is acceptable. A wireless USB dongle shall be supplied only where required for the offered wireless connection; all necessary cables/adapters shall be included.
102	53	Item No. 8 – Wireless Speakerphone with 8 Array Mic	wireless cascade: Device should have capability to cascade wirelessly with maximum up to 2 mic and both should be operate as a single unit	Cascade/expansion capability: The system shall support connection of up to two compatible units in total through wireless or an OEM-standard wired/digital link, with the connected units operating as one audio system. Required accessories shall be supplied.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
103	53	Item No. 8 – Wireless Speakerphone with 8 Array Mic	Control buttons: Power, Volume +/-, Mute, Bluetooth & Cascade or more	Controls shall include power, volume up/down, microphone mute and Bluetooth/call control, or equivalent functions. Cascade/expansion may be controlled automatically or through hardware/software and need not have a dedicated button.
104	53	Item No. 8 – Wireless Speakerphone with 8 Array Mic	Sensitivity: -26dBFS +/-1dB @ 1Pa	Microphone sensitivity shall be declared with the applicable test conditions; no fixed -26 dBFS value is mandatory. The offered device shall provide clear 360° speech pickup over the stipulated coverage range.
105	53	Item No. 8 – Wireless Speakerphone with 8 Array Mic	Frequency response 90 Hz- 16kHz	Microphone frequency response shall cover at least 100 Hz to 16 kHz; an equal or wider OEM-specified range is acceptable.
106	53	Item No. 8 – Wireless Speakerphone with 8 Array Mic	Number of Speakers Should have inbuilt Dual Speakers or better	Integrated speaker system: One or more built-in speakers using an OEM-designed configuration, capable of full-duplex conferencing and meeting the stipulated frequency/output performance. The configuration shall be declared.
107	53	Item No. 8 – Wireless Speakerphone with 8 Array Mic	Speakers 2" Main unit with 0.75" tweeter	The fixed speaker-driver size/configuration requirement is deleted. The bidder shall declare the offered speaker design and demonstrate compliance with the revised frequency and output requirements.
108	53	Item No. 8 – Wireless Speakerphone with 8 Array Mic	Speaker Power Minimum 15 Watt with 10-Watt (base) & 5-Watt (tweeter) or better	Speaker output: Total rated speaker power shall be at least 5 W, or the offered unit shall demonstrate equivalent sound-pressure output suitable for the intended room. Rated power and test conditions shall be declared.
109	53	Item No. 8 – Wireless Speakerphone with 8 Array Mic	Connectivity USB Type C, Wireless USB Dongle and Bluetooth V5.2 or better	Connectivity: USB 2.0 or higher wired connection and Bluetooth 5.0 or later. USB Type-A, Type-B or Type-C is acceptable. A wireless USB dongle shall be supplied only where required for the offered wireless connection; all necessary cables/adapters shall be included.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
110	53	Item No. 8 – Wireless Speakerphone with 8 Array Mic	Wireless Cascade Device should have capability to cascade wirelessly with maximum up to 2 mic and both should be operate as a single unit	Cascade/expansion capability: The system shall support connection of up to two compatible units in total through wireless or an OEM-standard wired/digital link, with the connected units operating as one audio system. Required accessories shall be supplied.
111	53	Item No. 8 – Wireless Speakerphone with 8 Array Mic	Control buttons Power, Volume +/-, Mute, Bluetooth & Cascade or more	Controls shall include power, volume up/down, microphone mute and Bluetooth/call control, or equivalent functions. Cascade/expansion may be controlled automatically or through hardware/software and need not have a dedicated button.
112	54	Item No. 10 – All in One Video Bar	Speaker power: 10 watt or higher	Speaker output: Total rated speaker power shall be at least 5 W and shall be suitable for the intended conferencing room. The bidder shall declare rated power and OEM sound-pressure/test data.
113	54	Item No. 10 – All in One Video Bar	No. of microphones - Inbuilt 8 microphones or more	Microphone array: An OEM-designed beamforming array with at least 4 built-in microphone elements, providing full-duplex pickup over the stipulated range. The element count shall be declared but shall not be the sole compliance criterion.
114	54	Item No. 10 – All in One Video Bar	pickup range - 8 meters or better	Microphone pickup range: At least 6 metres under OEM-declared test conditions. The solution shall be capable of extending coverage up to 8 metres through a compatible expansion microphone where required; any required accessory shall be quoted/supplied as specified.
115	54	Item No. 10 – All in One Video Bar	network interface: 1 x RJ45 or more	Network interface: RJ45 Ethernet is not mandatory for basic USB operation. Where the offered solution uses IP streaming, cloud management or remote device management, network connectivity through RJ45 and/or Wi-Fi shall be provided with required licences/accessories.
116	54	Item No. 10 – All in One Video Bar	Speaker power 10 watt or higher	Speaker output: Total rated speaker power shall be at least 5 W and shall be suitable for the intended conferencing room. The bidder shall declare rated power and OEM sound-pressure/test data.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
117	54	Item No. 10 – All in One Video Bar	No. of Microphones inbuilt 8 microphones or more	Microphone array: An OEM-designed beamforming array with at least 4 built-in microphone elements, providing full-duplex pickup over the stipulated range. The element count shall be declared but shall not be the sole compliance criterion.
118	54	Item No. 10 – All in One Video Bar	Pickup range: 8 meters or better	Microphone pickup range: At least 6 metres under OEM-declared test conditions. The solution shall be capable of extending coverage up to 8 metres through a compatible expansion microphone where required; any required accessory shall be quoted/supplied as specified.
119	54	Item No. 10 – All in One Video Bar	Network interface: 1 x RJ45 or more	Network interface: RJ45 Ethernet is not mandatory for basic USB operation. Where the offered solution uses IP streaming, cloud management or remote device management, network connectivity through RJ45 and/or Wi-Fi shall be provided with required licences/accessories.
120	54	Item No. 10 – All in One Video Bar_v1	Field of View: Diagonal 120 or more, Horizontal 110 or more, Vertical 75 or more	Field of view: Diagonal FOV at least 120° and horizontal FOV at least 110° at the widest position. Vertical FOV shall be declared by the bidder.
121	54	Item No. 10 – All in One Video Bar_v2	Auto tracking AI modes: Single person tracking, speaker tracking, participant tracking, close-up of speaker	AI capabilities: Auto/group framing and speaker/presenter or subject tracking shall be supported. Equivalent OEM terminology, automatic view switching and functionally equivalent tracking modes shall be accepted.
122	54	Item No. 10 – All in One Video Bar_v3	Digital noise reduction: 2D&3D	Digital noise reduction: 2D and/or 3D digital noise reduction, or equivalent OEM image-enhancement/noise-reduction technology, shall be supported.
123	54	Item No. 10 – All in One Video Bar_v4	Backlight compensation: Supported	Backlight compensation, automatic exposure/WDR, or an equivalent OEM image-processing function for backlit scenes shall be supported.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
124	54	Item No. 10 – All in One Video Bar_v5	SNR >55db	Video SNR: At least 50 dB, or an equivalent OEM image-quality specification supported by the product datasheet or a test report, shall be accepted.
125	54	Item No. 10 – All in One Video Bar_v6	SNR >55db	The query is treated against Pan/Tilt (Sr. No. 13), not SNR. Revised clause: Electronic PTZ or mechanical-plus-electronic PTZ shall support participant framing across the stated FOV; the effective pan/tilt range shall be declared. No fixed ±10° range is mandatory.
126	54	Item No. 10 – All in One Video Bar_v7	Inbuilt 8 microphones or more	Microphone array: An OEM-designed beamforming array with at least 4 built-in microphone elements, providing full-duplex pickup over the stipulated range. The element count shall be declared but shall not be the sole compliance criterion.
127	54	Item No. 10 – All in One Video Bar_v8	Pickup range: 8 meters or better	Microphone pickup range: At least 6 metres under OEM-declared test conditions. The solution shall be capable of extending coverage up to 8 metres through a compatible expansion microphone where required; any required accessory shall be quoted/supplied as specified.
128	54	Item No. 10 – All in One Video Bar_v9	Remote: IR Remote control with 3 Preset buttons	Remote/control: IR, RF/2.4 GHz or Bluetooth remote control, or supplied software control, shall be acceptable. At least 2 user-configurable camera presets shall be supported; AI auto-framing may be provided additionally.
129	54	Item No. 10 – All in One Video Bar_v10	Request to add new clause Centralized cloud management Solution should support centralized cloud-based device monitoring, inventory management, software updates, diagnostics, and configuration.	Centralized cloud management may be offered as an optional feature and shall not be mandatory for technical compliance. Any licences/subscriptions, hosting location, security controls and recurring charges shall be clearly disclosed.
130	54	Item No. 10 – All in One Video Bar	22. HD Interface 1xHDMI or more 23. USB Interface 1 x USB 3.0, 1 x USB2.0 or more 24. Network Interface 1 x RJ45 or more	Interfaces: (i) at least 1 × HDMI output supporting the required video format; (ii) at least 1 × USB 3.0 or higher UVC/UAC interface, with Type-A, Type-B or Type-C accepted and required cable supplied; a separate USB 2.0 port is not mandatory; and (iii) network connectivity through RJ45 and/or Wi-Fi where required by the offered IP/cloud architecture.
131	55	Item No. 10 - All in One video Bar	22. HD Interface 1xHDMI or more 23. USB Interface 1 x USB 3.0, 1 x USB2.0 or more 24. Network Interface 1 x RJ45 or more	Interfaces: (i) at least 1 × HDMI output supporting the required video format; (ii) at least 1 × USB 3.0 or higher UVC/UAC interface, with Type-A, Type-B or Type-C accepted and required cable supplied; a separate USB 2.0 port is not mandatory; and (iii) network connectivity through RJ45 and/or Wi-Fi where required by the offered IP/cloud architecture.
132	55	Item No. 10: All-in-One Video bar	22. HD Interface 1xHDMI or more 23. USB Interface 1 x USB 3.0, 1 x USB2.0 or more 24. Network Interface 1 x RJ45 or more	Interfaces: (i) at least 1 × HDMI output supporting the required video format; (ii) at least 1 × USB 3.0 or higher UVC/UAC interface, with Type-A, Type-B or Type-C accepted and required cable supplied; a separate USB 2.0 port is not mandatory; and (iii) network connectivity through RJ45 and/or Wi-Fi where required by the offered IP/cloud architecture.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
133	56	Item 11 – 55" Vertical Digital Signage Kiosk	Contrast Ratio: 5000:1 or better	Contrast ratio: 4000:1 or better (native/static panel contrast).
134	56	Item 11 – 55" Vertical Digital Signage Kiosk	Response Time: 6 ms or better	Response time (display): 8 ms or better.
135	56	Item 11 – 55" Vertical Digital Signage Kiosk	Operating Temparature: 0–50°C	Operating temperature: 0°C to 40°C or wider.
136	56	Item 11 – 55" Vertical Digital Signage Kiosk	Operating System: Android 11 or latest	Operating system: Android 11 or later, Tizen, webOS, or any equivalent OEM commercial-signage operating system, provided the offered solution supports all specified signage/CMS functions, interfaces, security updates and remote-management requirements. All required licences/subscriptions for the warranty period shall be included and disclosed.
137	56	Item 11 – 55" Vertical Digital Signage Kiosk	contrast ratio - 5000:1 or better	Contrast ratio: 4000:1 or better (native/static panel contrast).
138	56	Item 11 – 55" Vertical Digital Signage Kiosk	response time : 6 ms or better	Response time (display): 8 ms or better.
139	56	Item 11 – 55" Vertical Digital Signage Kiosk	Operating Temparature: 0–50°C	Operating temperature: 0°C to 40°C or wider.
140	56	Item 11 – 55" Vertical Digital Signage Kiosk	Operating System: Android 11 or latest	Operating system: Android 11 or later, Tizen, webOS, or any equivalent OEM commercial-signage operating system, provided the offered solution supports all specified signage/CMS functions, interfaces, security updates and remote-management requirements. All required licences/subscriptions for the warranty period shall be included and disclosed.
141	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	contrast ratio: 5000:1 or better	Contrast ratio: 4000:1 or better (native/static panel contrast).
142	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	Response time: 6 ms or better	Response time (display): 8 ms or better.
143	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	Touch Type: Infrared Touch	Touch functionality may be integrated or provided through an OEM/OEM-authorized compatible overlay supplied, fitted and warranted as part of the complete kiosk. The complete touch solution shall meet: infrared touch; positioning accuracy of ±2 mm or better; transmittance of 92% or higher; surface hardness of 7H or better; touch response of 6 ms or better; at least 10 simultaneous touch points; and finger-touch operation.
144	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	Positioning accuracy: ±2mm or better	Touch functionality may be integrated or provided through an OEM/OEM-authorized compatible overlay supplied, fitted and warranted as part of the complete kiosk. The complete touch solution shall meet: infrared touch; positioning accuracy of ±2 mm or better; transmittance of 92% or higher; surface hardness of 7H or better; touch response of 6 ms or better; at least 10 simultaneous touch points; and finger-touch operation.
145	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	Transmittance: ≥92% or better	Touch functionality may be integrated or provided through an OEM/OEM-authorized compatible overlay supplied, fitted and warranted as part of the complete kiosk. The complete touch solution shall meet: infrared touch; positioning accuracy of ±2 mm or better; transmittance of 92% or higher; surface hardness of 7H or better; touch response of 6 ms or better; at least 10 simultaneous touch points; and finger-touch operation.
146	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	Hardness: 7H or better	Touch functionality may be integrated or provided through an OEM/OEM-authorized compatible overlay supplied, fitted and warranted as part of the complete kiosk. The complete touch solution shall meet: infrared touch; positioning accuracy of ±2 mm or better; transmittance of 92% or higher; surface hardness of 7H or better; touch response of 6 ms or better; at least 10 simultaneous touch points; and finger-touch operation.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
147	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	Response time: 6 ms or better	Touch functionality may be integrated or provided through an OEM/OEM-authorized compatible overlay supplied, fitted and warranted as part of the complete kiosk. The complete touch solution shall meet: infrared touch; positioning accuracy of ±2 mm or better; transmittance of 92% or higher; surface hardness of 7H or better; touch response of 6 ms or better; at least 10 simultaneous touch points; and finger-touch operation.
148	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	No. of touch points: 10 touch points or more	Touch functionality may be integrated or provided through an OEM/OEM-authorized compatible overlay supplied, fitted and warranted as part of the complete kiosk. The complete touch solution shall meet: infrared touch; positioning accuracy of ±2 mm or better; transmittance of 92% or higher; surface hardness of 7H or better; touch response of 6 ms or better; at least 10 simultaneous touch points; and finger-touch operation.
149	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	Touch media: Finger touch	Touch functionality may be integrated or provided through an OEM/OEM-authorized compatible overlay supplied, fitted and warranted as part of the complete kiosk. The complete touch solution shall meet: infrared touch; positioning accuracy of ±2 mm or better; transmittance of 92% or higher; surface hardness of 7H or better; touch response of 6 ms or better; at least 10 simultaneous touch points; and finger-touch operation.
150	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	Operation temparture: 0-50 degree Celsius	Operating temperature: 0°C to 40°C or wider.
151	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	Operating system: Android 11 or latest	Operating system: Android 11 or later, Tizen, webOS, or any equivalent OEM commercial-signage operating system, provided the offered solution supports all specified signage/CMS functions, interfaces, security updates and remote-management requirements. All required licences/subscriptions for the warranty period shall be included and disclosed.
152	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	contrast ratio: 5000:1 or better	Contrast ratio: 4000:1 or better (native/static panel contrast).
153	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	Response time: 6 ms or better	Response time (display): 8 ms or better.
154	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	Touch Type: Infrared Touch	Touch functionality may be integrated or provided through an OEM/OEM-authorized compatible overlay supplied, fitted and warranted as part of the complete kiosk. The complete touch solution shall meet: infrared touch; positioning accuracy of ±2 mm or better; transmittance of 92% or higher; surface hardness of 7H or better; touch response of 6 ms or better; at least 10 simultaneous touch points; and finger-touch operation.
155	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	Positioning accuracy: ±2mm or better	Touch functionality may be integrated or provided through an OEM/OEM-authorized compatible overlay supplied, fitted and warranted as part of the complete kiosk. The complete touch solution shall meet: infrared touch; positioning accuracy of ±2 mm or better; transmittance of 92% or higher; surface hardness of 7H or better; touch response of 6 ms or better; at least 10 simultaneous touch points; and finger-touch operation.
156	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	Transmittance: ≥92% or better	Touch functionality may be integrated or provided through an OEM/OEM-authorized compatible overlay supplied, fitted and warranted as part of the complete kiosk. The complete touch solution shall meet: infrared touch; positioning accuracy of ±2 mm or better; transmittance of 92% or higher; surface hardness of 7H or better; touch response of 6 ms or better; at least 10 simultaneous touch points; and finger-touch operation.
157	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	Hardness: 7H or better	Touch functionality may be integrated or provided through an OEM/OEM-authorized compatible overlay supplied, fitted and warranted as part of the complete kiosk. The complete touch solution shall meet: infrared touch; positioning accuracy of ±2 mm or better; transmittance of 92% or higher; surface hardness of 7H or better; touch response of 6 ms or better; at least 10 simultaneous touch points; and finger-touch operation.
158	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	Response time: 6 ms or better	Touch functionality may be integrated or provided through an OEM/OEM-authorized compatible overlay supplied, fitted and warranted as part of the complete kiosk. The complete touch solution shall meet: infrared touch; positioning accuracy of ±2 mm or better; transmittance of 92% or higher; surface hardness of 7H or better; touch response of 6 ms or better; at least 10 simultaneous touch points; and finger-touch operation.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
159	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	No. of touch points: 10 touch points or more	Touch functionality may be integrated or provided through an OEM/OEM-authorized compatible overlay supplied, fitted and warranted as part of the complete kiosk. The complete touch solution shall meet: infrared touch; positioning accuracy of ±2 mm or better; transmittance of 92% or higher; surface hardness of 7H or better; touch response of 6 ms or better; at least 10 simultaneous touch points; and finger-touch operation.
160	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	Touch media: Finger touch	Touch functionality may be integrated or provided through an OEM/OEM-authorized compatible overlay supplied, fitted and warranted as part of the complete kiosk. The complete touch solution shall meet: infrared touch; positioning accuracy of ±2 mm or better; transmittance of 92% or higher; surface hardness of 7H or better; touch response of 6 ms or better; at least 10 simultaneous touch points; and finger-touch operation.
161	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	Operation temparture: 0-50 degree Celsius	Operating temperature: 0°C to 40°C or wider.
162	56	Item No. 11 – Vertical Digital Signage Kiosk (55 Inch)	Operating system: Android 11 or latest	Operating system: Android 11 or later, Tizen, webOS, or any equivalent OEM commercial-signage operating system, provided the offered solution supports all specified signage/CMS functions, interfaces, security updates and remote-management requirements. All required licences/subscriptions for the warranty period shall be included and disclosed.
163	57	Item 12 – 21.5" Interactive Touch Screen Kiosk	Panel Type - IPS Technology	Panel type: IPS, ADS, PLS or equivalent wide-view TFT-LCD/LED technology meeting all other specified display parameters, including the required viewing angles.
164	57	Item 12 – 21.5" Interactive Touch Screen Kiosk	Contrast Ratio - 1200:1 or higher	Contrast ratio: 1000:1 or higher (native/static panel contrast).
165	57	Item 12 – 21.5" Interactive Touch Screen Kiosk	Panel Type: IPS Technology	Panel type: IPS, ADS, PLS or equivalent wide-view TFT-LCD/LED technology meeting all other specified display parameters, including the required viewing angles.
166	57	Item 12 – 21.5" Interactive Touch Screen Kiosk	Contrast ratio - 1200:1 or higher	Contrast ratio: 1000:1 or higher (native/static panel contrast).
167	58	Item 12 – 21.5" Interactive Touch Screen Kiosk	Connectivity - USB 1, HDMI 1, DP or better	Display connectivity (minimum): 1 × USB and 1 × HDMI. DisplayPort or another additional digital display interface may be offered but shall not be mandatory. All cables/adapters required for the offered configuration shall be supplied.
168	58	Item 12 – 21.5" Interactive Touch Screen Kiosk	Power Supply - 12V DC	Power supply: The complete kiosk shall accept 100–240 V AC, 50/60 Hz. The display may operate on 12 V DC through a supplied certified AC-to-DC adapter/internal SMPS, or may accept AC input directly. All power accessories shall be included.
169	58	Item 13 – 32" Interactive Touch Screen Kiosk	Contrast Ratio - 5000:1 or better	Contrast ratio: 4000:1 or better (native/static panel contrast).
170	58	Item 13 – 32" Interactive Touch Screen Kiosk	Response Time: 6 ms or better	Response time (display): 8 ms or better.
171	58	Item 12 – 21.5" Interactive Touch Screen Kiosk	Connectivity: USB 1, HDMI 1, DP or better	Display connectivity (minimum): 1 × USB and 1 × HDMI. DisplayPort or another additional digital display interface may be offered but shall not be mandatory. All cables/adapters required for the offered configuration shall be supplied.
172	58	Item 12 – 21.5" Interactive Touch Screen Kiosk	Power Supply : 12V DC	Power supply: The complete kiosk shall accept 100–240 V AC, 50/60 Hz. The display may operate on 12 V DC through a supplied certified AC-to-DC adapter/internal SMPS, or may accept AC input directly. All power accessories shall be included.
173	58	Item 13 – 32" Interactive Touch Screen Kiosk	Contrast ratio - 5000:1 or better	Contrast ratio: 4000:1 or better (native/static panel contrast).

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
174	58	Item 13 – 32" Interactive Touch Screen Kiosk	response time: 6 ms or better	Response time (display): 8 ms or better.
175	59	Item 13 – 32" Interactive Touch Screen Kiosk	Operating temparature - 0–50°C	Operating temperature: 0°C to 40°C or wider.
176	59	Item 13 – 32" Interactive Touch Screen Kiosk	Processor - ARM Cortex Quad-core @ 1.5 GHz or better	Processor: Quad-core or better processor/SoC suitable for the offered operating system and capable of running all specified signage functions. ARM Cortex architecture and a fixed clock speed shall not be mandatory for an OEM purpose-built signage platform. Compliance shall be supported by the OEM datasheet/undertaking.
177	59	Item 13 – 32" Interactive Touch Screen Kiosk	Memory - 4 GB or better	Memory: 2 GB RAM or higher. The offered configuration shall support simultaneous operation of all specified signage, scheduling, monitoring and content-management functions.
178	59	Item 13 – 32" Interactive Touch Screen Kiosk	Storage - 64 GB or better	Internal storage: 8 GB or higher. The bidder shall ensure adequate usable capacity for the operating system, applications and locally cached content required for all specified functions.
179	59	Item 13 – 32" Interactive Touch Screen Kiosk	Operating system - Android 12 or latest	Operating system: Android 12 or later, Tizen, webOS, or any equivalent OEM commercial-signage operating system, provided all specified signage/CMS, scheduling, device-management, security-update and interface requirements are met. All required licences/subscriptions for the warranty period shall be included and disclosed.
180	59	Item 13 – 32" Interactive Touch Screen Kiosk	Operating temparature: 0–50°C	Operating temperature: 0°C to 40°C or wider.
181	59	Item 13 – 32" Interactive Touch Screen Kiosk	Processor - ARM Cortex Quad-core @ 1.5 GHz or better	Processor: Quad-core or better processor/SoC suitable for the offered operating system and capable of running all specified signage functions. ARM Cortex architecture and a fixed clock speed shall not be mandatory for an OEM purpose-built signage platform. Compliance shall be supported by the OEM datasheet/undertaking.
182	59	Item 13 – 32" Interactive Touch Screen Kiosk	Memory: 4 GB or better	Memory: 2 GB RAM or higher. The offered configuration shall support simultaneous operation of all specified signage, scheduling, monitoring and content-management functions.
183	59	Item 13 – 32" Interactive Touch Screen Kiosk	Storage: 64 GB or better	Internal storage: 8 GB or higher. The bidder shall ensure adequate usable capacity for the operating system, applications and locally cached content required for all specified functions.
184	59	Item 13 – 32" Interactive Touch Screen Kiosk	Operating system: Android 12 or latest	Operating system: Android 12 or later, Tizen, webOS, or any equivalent OEM commercial-signage operating system, provided all specified signage/CMS, scheduling, device-management, security-update and interface requirements are met. All required licences/subscriptions for the warranty period shall be included and disclosed.
185	60	Item 14 – 43" Vertical Digital Signage Kiosk	Contrast Ratio - 5000:1 or better	Native/static contrast ratio: 1200:1 or better for IPS/ADS/equivalent wide-view panels, or 4000:1 or better for VA/equivalent high-contrast panels. All other brightness, resolution and viewing-angle requirements shall remain unchanged.
186	60	Item 14 – 43" Vertical Digital Signage Kiosk	Response Time - 6 ms or better	Response time (display): 8 ms or better.
187	60	Item 14 – 43" Vertical Digital Signage Kiosk	Power consumption : ≤60 W	Power consumption: typical operating consumption shall not exceed 90 W and maximum/rated consumption shall not exceed 120 W for the complete display and embedded computing configuration. The bidder shall declare both typical and maximum OEM-rated values.
188	60	Item 14 – 43" Vertical Digital Signage Kiosk	Operating temparature: 0–50°C	Operating temperature: 0°C to 40°C or wider.
189	60	Item 14 – 43" Vertical Digital Signage Kiosk	Processor - ARM Cortex Quad-core @ 1.5 GHz or better	Processor: Quad-core or better processor/SoC suitable for the offered operating system and capable of running all specified signage functions. ARM Cortex architecture and a fixed clock speed shall not be mandatory for an OEM purpose-built signage platform. Compliance shall be supported by the OEM datasheet/undertaking.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
190	60	Item 14 – 43" Vertical Digital Signage Kiosk	Memory: 4 GB or better	Memory: 2 GB RAM or higher. The offered configuration shall support simultaneous operation of all specified signage, scheduling, monitoring and content-management functions.
191	60	Item 14 – 43" Vertical Digital Signage Kiosk	Storage : 64 GB or better	Internal storage: 16 GB or higher. The bidder shall ensure adequate usable capacity for the operating system, applications and locally cached content required for all specified functions.
192	60	Item 14 – 43" Vertical Digital Signage Kiosk	Operating system - Android 12 or latest	Operating system: Android 12 or later, Tizen, webOS, or any equivalent OEM commercial-signage operating system, provided all specified signage/CMS, scheduling, device-management, security-update and interface requirements are met. All required licences/subscriptions for the warranty period shall be included and disclosed.
193	60	Item 14 – 43" Vertical Digital Signage Kiosk	contrast ratio - 5000:1 or better	Native/static contrast ratio: 1200:1 or better for IPS/ADS/equivalent wide-view panels, or 4000:1 or better for VA/equivalent high-contrast panels. All other brightness, resolution and viewing-angle requirements shall remain unchanged.
194	60	Item 14 – 43" Vertical Digital Signage Kiosk	Response Time: 6 ms or better	Response time (display): 8 ms or better.
195	60	Item 14 – 43" Vertical Digital Signage Kiosk	Power consumption ≤60 W	Power consumption: typical operating consumption shall not exceed 90 W and maximum/rated consumption shall not exceed 120 W for the complete display and embedded computing configuration. The bidder shall declare both typical and maximum OEM-rated values.
196	60	Item 14 – 43" Vertical Digital Signage Kiosk	Operating temparature: 0–50°C	Operating temperature: 0°C to 40°C or wider.
197	60	Item 14 – 43" Vertical Digital Signage Kiosk	Processor - ARM Cortex Quad-core @ 1.5 GHz or better	Processor: Quad-core or better processor/SoC suitable for the offered operating system and capable of running all specified signage functions. ARM Cortex architecture and a fixed clock speed shall not be mandatory for an OEM purpose-built signage platform. Compliance shall be supported by the OEM datasheet/undertaking.
198	60	Item 14 – 43" Vertical Digital Signage Kiosk	Memory: 4 GB or better	Memory: 2 GB RAM or higher. The offered configuration shall support simultaneous operation of all specified signage, scheduling, monitoring and content-management functions.
199	60	Item 14 – 43" Vertical Digital Signage Kiosk	Storage: 64 GB or better	Internal storage: 16 GB or higher. The bidder shall ensure adequate usable capacity for the operating system, applications and locally cached content required for all specified functions.
200	60	Item 14 – 43" Vertical Digital Signage Kiosk	Operating system: Android 12 or latest	Operating system: Android 12 or later, Tizen, webOS, or any equivalent OEM commercial-signage operating system, provided all specified signage/CMS, scheduling, device-management, security-update and interface requirements are met. All required licences/subscriptions for the warranty period shall be included and disclosed.
201	60	Item No 14: Vertical Digital Signage Kiosk (43 Inch)	5000:1 or better	Native/static contrast ratio: 1200:1 or better for IPS/ADS/equivalent wide-view panels, or 4000:1 or better for VA/equivalent high-contrast panels. All other brightness, resolution and viewing-angle requirements shall remain unchanged.
202	60	Item No 14: Vertical Digital Signage Kiosk (43 Inch)	6 ms or better	Response time (display): 8 ms or better.
203	60	Item No 14: Vertical Digital Signage Kiosk (43 Inch)	4 GB or Better	Memory: 2 GB RAM or higher. The offered configuration shall support simultaneous operation of all specified signage, scheduling, monitoring and content-management functions.
204	60	Item No 14: Vertical Digital Signage Kiosk (43 Inch)	64 GB or Better	Internal storage: 16 GB or higher. The bidder shall ensure adequate usable capacity for the operating system, applications and locally cached content required for all specified functions.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
205	60	Item No 14: Vertical Digital Signage Kiosk (43 Inch)	Android 12 or Latest	Operating system: Android 12 or later, Tizen, webOS, or any equivalent OEM commercial-signage operating system, provided all specified signage/CMS, scheduling, device-management, security-update and interface requirements are met. All required licences/subscriptions for the warranty period shall be included and disclosed.
206	60	Item No 14: Vertical Digital Signage Kiosk (43 Inch)	5000:1 or better	Native/static contrast ratio: 1200:1 or better for IPS/ADS/equivalent wide-view panels, or 4000:1 or better for VA/equivalent high-contrast panels. All other brightness, resolution and viewing-angle requirements shall remain unchanged.
207	60	Item No 14: Vertical Digital Signage Kiosk (43 Inch)	6 ms or better	Response time (display): 8 ms or better.
208	60	Item No 14: Vertical Digital Signage Kiosk (43 Inch)	4 GB or Better	Memory: 2 GB RAM or higher. The offered configuration shall support simultaneous operation of all specified signage, scheduling, monitoring and content-management functions.
209	60	Item No 14: Vertical Digital Signage Kiosk (43 Inch)	64 GB or Better	Internal storage: 16 GB or higher. The bidder shall ensure adequate usable capacity for the operating system, applications and locally cached content required for all specified functions.
210	60	Item No 14: Vertical Digital Signage Kiosk (43 Inch)	Android 12 or Latest	Operating system: Android 12 or later, Tizen, webOS, or any equivalent OEM commercial-signage operating system, provided all specified signage/CMS, scheduling, device-management, security-update and interface requirements are met. All required licences/subscriptions for the warranty period shall be included and disclosed.
211	61	Item No. 15 - OPS Module (core i5 Class)	CPU	CPU: Intel Core i5, 12th Generation or later, or equivalent current-generation processor meeting or exceeding the offered processor's performance.
212	61	Item No. 15 – OPS Module (Core i5 Class)	BIS certification required, as per BIS manufacturing facility should be in India in own name of OEM & Product catalogue should be available on OEM website.	Certification: The offered model shall hold valid BIS registration wherever applicable. Manufacturing may be through the OEM's own facility or an authorized contract-manufacturing facility covered by the applicable BIS registration/authorization. The product catalogue shall be available on the OEM website.
213	62	Item No. 17 – Micro Computer (Intel Core i5 Class or Equivalent)	Processor - Intel Core i5 (10th Gen or better processor)	Processor: Intel Core i5, 12th Generation or later, or equivalent processor of comparable or better performance.
214	62	Item No. 17 – Micro Computer (Intel Core i5 Class or Equivalent)	Small form factor - Computer should be of 2 liters Volume or less	Small form factor: Computer volume shall be 2 litres or less. No change in the published requirement.
215	62	Item No. 17 – Micro Computer (Intel Core i5 Class or Equivalent)	OS - Windows 10	Operating system: Genuine Windows 11 Professional, factory preloaded, with applicable licence and recovery media/partition.
216	62	Item No. 16 – OPS Module (Core i7 Class	BIS certification required, as per BIS manufacturing facility should be in India in own name of OEM & Product catalogue should be available on OEM website.	Certification: The offered model shall hold valid BIS registration wherever applicable. Manufacturing may be through the OEM's own facility or an authorized contract-manufacturing facility covered by the applicable BIS registration/authorization. The product catalogue shall be available on the OEM website.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
217	63	Item No. 18 – Micro Computer (Intel Core i7 Class or Equivalent)	Processor - Intel Core i7 (10th Gen or better processor)	Processor: Intel Core i7, 12th Generation or later, or equivalent processor of comparable or better performance.
218	63	Item No. 18 – Micro Computer (Intel Core i7 Class or Equivalent)	Small form factor - Computer should be of 2 liters Volume or less	Small form factor: Computer volume shall be 2 litres or less. No change in the published requirement.
219	63	Item No. 18 – Micro Computer (Intel Core i7 Class or Equivalent)	OS: Windows 10	Operating system: Genuine Windows 11 Professional, factory preloaded, with applicable licence and recovery media/partition.
220	63	Item No. 20 – Interactive Screen with Diagonal 65 inch	CPU: Octa-Core or better,– Processor- RK 3576	Processor: Octa-core or better processor/SoC capable of smooth 4K display, touch, whiteboard, casting and multitasking operation. Reference to RK3576 shall not be mandatory. Compliance shall be supported by the OEM datasheet/undertaking.
221	63	Item No. 20 – Interactive Screen with Diagonal 65 inch	Connectivity minimum ports - USB 3.0 Type A - 3, USB Type C - 1, HDMI In -2, RJ45 - 1, Mic in - 1, Earphone – 1	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.
222	63	Item No. 20 – Interactive Screen with Diagonal 65 inch	CPU: Octa-Core or better,– Processor- RK 3576	Processor: Octa-core or better processor/SoC capable of smooth 4K display, touch, whiteboard, casting and multitasking operation. Reference to RK3576 shall not be mandatory. Compliance shall be supported by the OEM datasheet/undertaking.
223	63	Item No. 20 – Interactive Screen with Diagonal 65 inch	Connectivity minimum ports - USB 3.0 Type A - 3, USB Type C - 1, HDMI In -2, RJ45 - 1, Mic in - 1, Earphone – 1	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.
224	63	Item No. 20 – Interactive Screen with Diagonal 65 inch	Touch glass - 4 mm tempered glass or better	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable.
225	63	Item No. 20 – Interactive Screen with Diagonal 65 inch	Touch response time: 6ms or better	Touch response time: 8 ms or better.
226	63	Item No. 20 – Interactive Screen with Diagonal 65 inch	Brightness: 350 nits or higher	Brightness: 350 nits or higher. No change; a display offering 400 nits shall be compliant.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
227	63	Item No. 20 – Interactive Screen with Diagonal 65 inch	Contrast ratio - 1100:1 or higher	Contrast ratio: 1100:1 or higher (native/static). No change; any higher offered value shall be acceptable.
228	63	Item No. 20 – Interactive Screen with Diagonal 65 inch	Touch response time - 6ms or better	Touch response time: 8 ms or better.
229	63	Item No. 20 – Interactive Screen with Diagonal 65 inch	Wi-fi 5 (2.4 and 5 GHz) or better	Wireless: Dual-band Wi-Fi 5 or better. Wi-Fi 6/6E or later shall be accepted as higher compliance.
230	63	Item No. 20 – Interactive Screen with Diagonal 65 inch	Bluetooth version 5.2 or higher	Bluetooth: Version 5.2 or higher. An offered version 5.3 or later shall be compliant.
231	63	Item No. 20 – Interactive Screen with Diagonal 65 inch	Max. Power consumption - 350 W or better	Maximum power consumption: 350 W or lower. The bidder shall declare the OEM-rated maximum value; lower consumption shall be treated as better compliance.
232	63-65	Section-5 [Technical Specifications Annexures {Item No.-20,21, 22 (Point No.-10)}]	4 mm tempered glass or better	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable.
233	63	Item No. 20 – Interactive Screen with Diagonal 65 inch	Touch glass - 4 mm tempered glass or better	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable.
234	63	Item No. 20 – Interactive Screen with Diagonal 65 inch	Touch response time: 6ms or better	Touch response time: 8 ms or better.
235	63	Item No. 20 - Interactive Screen with diagonal 65 inch	Touch glass - 4 mm tempered glass or better	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better. Touch response time: 8 ms or better.
236	64	Item No.21 – Interactive Screen with Diagonal 75 inch	CPU: Octa-Core or better- Processor- RK 3576	Processor: Octa-core or better processor/SoC capable of smooth 4K display, touch, whiteboard, casting and multitasking operation. Reference to RK3576 shall not be mandatory. Compliance shall be supported by the OEM datasheet/undertaking.
237	64	Item No.21 – Interactive Screen with Diagonal 75 inch	connectivity minimum ports - USB 3.0 Type A - 3, USB Type C - 1, HDMI In -2, RJ45 - 1, Mic in - 1, Earphone – 1	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
238	64	Item No.21 – Interactive Screen with Diagonal 75 inch	CPU: Octa-Core or better- Processor- RK 3576	Processor: Octa-core or better processor/SoC capable of smooth 4K display, touch, whiteboard, casting and multitasking operation. Reference to RK3576 shall not be mandatory. Compliance shall be supported by the OEM datasheet/undertaking.
239	64	Item No.21 – Interactive Screen with Diagonal 75 inch	Connectivity - Minimum Ports USB 3.0 Type A - 3, USB Type C - 1, HDMI In - 2, RJ45 - 1, Mic in - 1, Earphone – 1	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.
240	64	Item No.21 – Interactive Screen with Diagonal 75 inch	Touch glass - 4 mm tempered glass or better	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable.
241	64	Item No.21 – Interactive Screen with Diagonal 75 inch	Touch response time: 6ms or better	Touch response time: 8 ms or better.
242	64	Item No.21 – Interactive Screen with Diagonal 75 inch	Brightness - 350 nits or higher	Brightness: 350 nits or higher. No change; a display offering 400 nits shall be compliant.
243	64	Item No.21 – Interactive Screen with Diagonal 75 inch	contrast ratio - 1100:1 or higher	Contrast ratio: 1100:1 or higher (native/static). No change; any higher offered value shall be acceptable.
244	64	Item No.21 – Interactive Screen with Diagonal 75 inch	Touch response time - 6ms or better	Touch response time: 8 ms or better.
245	64	Item No.21 – Interactive Screen with Diagonal 75 inch	Wi-fi 5 (2.4 and 5 GHz) or better	Wireless: Dual-band Wi-Fi 5 or better. Wi-Fi 6/6E or later shall be accepted as higher compliance.
246	64	Item No.21 – Interactive Screen with Diagonal 75 inch	Bluetooth version 5.2 or higher	Bluetooth: Version 5.2 or higher. An offered version 5.3 or later shall be compliant.
247	64	Item No.21 – Interactive Screen with Diagonal 75 inch	Max. Power consumption - 350 W or better	Maximum power consumption: 350 W or lower. The bidder shall declare the OEM-rated maximum value; lower consumption shall be treated as better compliance.
248	64	Item No.21 – Interactive Screen with Diagonal 75 inch	Touch glass - 4 mm tempered glass or better	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable.
249	64	Item No.21 – Interactive Screen with Diagonal 75 inch	Touch response time: 6ms or better	Touch response time: 8 ms or better.
250	64	Item No. 21 - Interactive Screen with diagonal 75 inch	Touch glass - 4 mm tempered glass or better	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better. Touch response time: 8 ms or better.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
251	65	Item No. 22 – Interactive Screen with Diagonal 86 inch	CPU - Octa-Core or better - Processor- RK 3576	Processor: Octa-core or better processor/SoC capable of smooth 4K display, touch, whiteboard, casting and multitasking operation. Reference to RK3576 shall not be mandatory. Compliance shall be supported by the OEM datasheet/undertaking.
252	65	Item No. 22 – Interactive Screen with Diagonal 86 inch	Connectivity minimum ports - USB 3.0 Type A - 3, USB Type C - 1, HDMI In -2, RJ45 - 1, Mic in - 1, Earphone – 1	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.
253	65	Item No. 22 – Interactive Screen with Diagonal 86 inch	CPU: Octa-Core or better - Processor- RK 3576	Processor: Octa-core or better processor/SoC capable of smooth 4K display, touch, whiteboard, casting and multitasking operation. Reference to RK3576 shall not be mandatory. Compliance shall be supported by the OEM datasheet/undertaking.
254	65	Item No. 22 – Interactive Screen with Diagonal 86 inch	Connectivity minimum ports - USB 3.0 Type A - 3, USB Type C - 1, HDMI In - 2, RJ45 - 1, Mic in - 1, Earphone – 1	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.
255	65	Item No. 22 – Interactive Screen with Diagonal 86 inch	Brightness (typical) 450 nits or higher	Brightness: 400 nits or higher (typical).
256	65	Item No. 22 – Interactive Screen with Diagonal 86 inch	Touch glass - 4 mm tempered glass or better	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable.
257	65	Item No. 22 – Interactive Screen with Diagonal 86 inch	Touch response time: 6ms or better	Touch response time: 8 ms or better.
258	65	Item No. 22 – Interactive Screen with Diagonal 86 inch	Brightness - 450 nits or higher	Brightness: 400 nits or higher (typical).
259	65	Item No. 22 – Interactive Screen with Diagonal 86 inch	contrast ratio - 1100:1 or higher	Contrast ratio: 1100:1 or higher (native/static). No change; any higher offered value shall be acceptable.
260	65	Item No. 22 – Interactive Screen with Diagonal 86 inch	Touch response time - 6ms or better	Touch response time: 8 ms or better.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
261	65	Item No. 22 – Interactive Screen with Diagonal 86 inch	Wi-fi 5 (2.4 and 5 GHz) or better	Wireless: Dual-band Wi-Fi 5 or better. Wi-Fi 6/6E or later shall be accepted as higher compliance.
262	65	Item No. 22 – Interactive Screen with Diagonal 86 inch	Bluetooth version 5.2 or higher	Bluetooth: Version 5.2 or higher. An offered version 5.3 or later shall be compliant.
263	65	Item No. 22 – Interactive Screen with Diagonal 86 inch	Max. Power consumption - 350 W or better	Maximum power consumption: 350 W or lower. The bidder shall declare the OEM-rated maximum value; lower consumption shall be treated as better compliance.
264	65	Section-5 [Technical Specifications Annexures {Item No.-22 (Point No.-3)}]	450 nits or higher	Brightness: 400 nits or higher (typical).
265	65	Item No. 22 – Interactive Screen with Diagonal 86 inch	Brightness (typical) 450 nits or higher	Brightness: 400 nits or higher (typical).
266	65	Item No. 22 – Interactive Screen with Diagonal 86 inch	Touch glass - 4 mm tempered glass or better	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable.
267	65	Item No. 22 – Interactive Screen with Diagonal 86 inch	Touch response time: 6ms or better	Touch response time: 8 ms or better.
268	65	Item No. 22 - Interactive Screen with diagonal 86 inch	Touch glass - 4 mm tempered glass or better	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better. Touch response time: 8 ms or better.
269	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	Brightness - 500 nits or higher	Brightness: 400 nits or higher (typical).
270	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	CPU - Octa-Core or better- Processor- RK 3576	Processor: Quad-core or better OEM processor/SoC capable of smooth 4K display, touch, whiteboard, casting and multitasking operation. No specific processor model shall be mandatory; compliance shall be supported by the OEM datasheet/undertaking.
271	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	Connectivity minimum ports - USB 3.0 Type A - 3, USB Type C - 1, HDMI In -2, RJ45 - 1, Mic in - 1, Earphone – 1	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.
272	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	Brightness (typical) 500 nits or higher	Brightness: 400 nits or higher (typical).

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
273	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	CPU: Octa-Core or better- Processor- RK 3576	Processor: Quad-core or better OEM processor/SoC capable of smooth 4K display, touch, whiteboard, casting and multitasking operation. No specific processor model shall be mandatory; compliance shall be supported by the OEM datasheet/undertaking.
274	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	Connectivity - Minimum Ports USB 3.0 Type A - 3, USB Type C - 1, HDMI In - 2, RJ45 - 1, Mic in - 1, Earphone – 1	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.
275	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	Max power consumption - 350W or better	Maximum power consumption for 98-inch/110-inch interactive displays: 650 W or lower. The OEM-rated maximum value shall be declared.
276	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	Brightness (typical) 500 nits or better	Brightness: 400 nits or higher (typical).
277	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	CPU: Octa-core or better processor- RK 3576	Processor: Quad-core or better OEM processor/SoC capable of smooth 4K display, touch, whiteboard, casting and multitasking operation. No specific processor model shall be mandatory; compliance shall be supported by the OEM datasheet/undertaking.
278	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	Storage (ROM) - 128 GB or higher	Internal storage: 64 GB or higher.
279	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	OS: Android 16.0 or better	Operating system: Android 13 or later, with OEM security updates and support during the warranty period.
280	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	Speakers: 20 Watt x 2 speakers or better	Built-in audio: Minimum 15 W × 2 speakers. A higher-output built-in or supplied external audio system shall be acceptable.
281	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	Bluetooth version 5.2 or higher	Bluetooth: Version 5.0 or higher.
282	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	Max Power consumption: 350 W or better	Maximum power consumption for 98-inch/110-inch interactive displays: 650 W or lower. The OEM-rated maximum value shall be declared.
283	66-75	Section-5 [Technical Specifications Annexures {Item No.-23-32 (Point No.-3)}]	500 nits or higher	Brightness: 400 nits or higher (typical).
284	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	Brightness (typical) 500 nits or better	Brightness: 400 nits or higher (typical).

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
285	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	CPU: Octa-core or better processor- RK 3576	Processor: Quad-core or better OEM processor/SoC capable of smooth 4K display, touch, whiteboard, casting and multitasking operation. No specific processor model shall be mandatory; compliance shall be supported by the OEM datasheet/undertaking.
286	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	Storage (ROM) - 128 GB or higher	Internal storage: 64 GB or higher.
287	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	OS: Android 16.0 or better	Operating system: Android 13 or later, with OEM security updates and support during the warranty period.
288	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	Speakers: 20 Watt x 2 speakers or better	Built-in audio: Minimum 15 W × 2 speakers. A higher-output built-in or supplied external audio system shall be acceptable.
289	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	Bluetooth version 5.2 or higher	Bluetooth: Version 5.0 or higher.
290	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	Max Power consumption: 350 W or better	Maximum power consumption for 98-inch/110-inch interactive displays: 650 W or lower. The OEM-rated maximum value shall be declared.
291	66	Item No. 23 - Interactive Screen with diagonal 98 inch	Touch glass - 4 mm tempered glass or better Touch response time - 6ms or better	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better. Touch response time: 8 ms or better.
292	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	Brightness (Typical) - 500 nits or higher	Brightness: 400 nits or higher (typical).
293	66	Item No. 23 – Interactive Screen with Diagonal 98 inch	Max. Power Consumption: 350 W or Better	Maximum power consumption for 98-inch/110-inch interactive displays: 650 W or lower. The OEM-rated maximum value shall be declared.
294	67	Item No. 24 – Interactive Screen with Diagonal 110 inch	Brightness - 500 nits or higher	Brightness: 400 nits or higher (typical).
295	67	Item No. 24 – Interactive Screen with Diagonal 110 inch	CPU - Octa-Core or better Processor- RK 3576	Processor: Quad-core or better OEM processor/SoC capable of smooth 4K display, touch, whiteboard, casting and multitasking operation. No specific processor model shall be mandatory; compliance shall be supported by the OEM datasheet/undertaking.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
296	67	Item No. 24 – Interactive Screen with Diagonal 110 inch	Connectivity minimum ports : USB 3.0 Type A - 3, USB Type C - 1, HDMI In -2, RJ45 - 1, Mic in - 1, Earphone – 1	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.
297	67	Item No. 24 – Interactive Screen with Diagonal 110 inch	Max. Power consumption - 350 W or Better	Maximum power consumption for 98-inch/110-inch interactive displays: 650 W or lower. The OEM-rated maximum value shall be declared.
298	67	Item No. 24 – Interactive Screen with Diagonal 110 inch	Brightness (typical) 500 nits or higher	Brightness: 400 nits or higher (typical).
299	67	Item No. 24 – Interactive Screen with Diagonal 110 inch	CPU: Octa-core or better processor- RK 3576	Processor: Quad-core or better OEM processor/SoC capable of smooth 4K display, touch, whiteboard, casting and multitasking operation. No specific processor model shall be mandatory; compliance shall be supported by the OEM datasheet/undertaking.
300	67	Item No. 24 – Interactive Screen with Diagonal 110 inch	connectivity - minimum ports - USB 3.0 Type A - 3, USB Type C - 1, HDMI In - 2, RJ45 - 1, Mic in - 1, Earphone – 1	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.
301	67	Item No. 24 – Interactive Screen with Diagonal 110 inch	Max. Power consumption - 350 W or better	Maximum power consumption for 98-inch/110-inch interactive displays: 650 W or lower. The OEM-rated maximum value shall be declared.
302	67	Item No. 24 - Interactive Screen with diagonal 110 inch	Brightness (typical) 500 nits or higher	For the 110-inch interactive display: brightness shall be 400 nits or higher; operating system shall be Android 13 or later with OEM support; and built-in audio shall be at least 15 W × 2, with any additional supplied subwoofer/external audio accepted.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
303	68	Item No. 25 – Interactive Screen with Diagonal 65 inches with camera & Mic	Connectivity minimum ports: USB 3.0 Type A - 3, USB Type C - 1, HDMI In -2, RJ45 - 1, Mic in - 1, Earphone – 1	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.
304	68	Item No. 25 – Interactive Screen with Diagonal 65 inches with camera & Mic	Connectivity minimum ports - USB 3.0 Type A - 3, USB Type C - 1, HDMI In - 2, RJ45 - 1, Mic in - 1, Earphone – 1	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.
305	68	Item No. 25 – Interactive Screen with Diagonal 65 inches with camera & Mic	Touch glass - 4 mm tempered glass or better	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable.
306	68	Item No. 25 – Interactive Screen with Diagonal 65 inches with camera & Mic	Touch response time: 6ms or better	Touch response time: 8 ms or better.
307	68	Item No. 25 – Interactive Screen with Diagonal 65 inches with camera & Mic	Camera - 48MP AI camera with inbuilt 6-microphone array	Camera and microphone: The specified AI camera and microphone array may be integrated or supplied as an external OEM/OEM-authorized unit as part of the standard supply, provided the complete solution meets or exceeds the specified resolution, AI framing/tracking, pickup and conferencing functions and carries a unified warranty.
308	68	Item No. 25 – Interactive Screen with Diagonal 65 inches with camera & Mic	Touch glass - 4 mm tempered glass or better	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable.
309	68	Item No. 25 – Interactive Screen with Diagonal 65 inches with camera & Mic	Touch response time: 6ms or better	Touch response time: 8 ms or better.
310	68	Item No. 25 – Interactive Screen with Diagonal 65 inches with camera & Mic	Camera - 48MP AI camera with inbuilt 6-microphone array	Camera and microphone: The specified AI camera and microphone array may be integrated or supplied as an external OEM/OEM-authorized unit as part of the standard supply, provided the complete solution meets or exceeds the specified resolution, AI framing/tracking, pickup and conferencing functions and carries a unified warranty.
311	68	Item No. 25 – Interactive Screen with Diagonal 65 inches with camera & Mic	Touch glass - 4 mm tempered glass or better	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable.
312	69	Item No. 26 – Interactive Screen with Diagonal 75 inches with camera & Mic	Connectivity minimum ports: USB 3.0 Type A - 3, USB Type C - 1, HDMI In -2, RJ45 - 1, Mic in - 1, Earphone – 1	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
313	69	Item No. 26 – Interactive Screen with Diagonal 75 inches with camera & Mic	Connectivity minimum ports - USB 3.0 Type A - 3, USB Type C - 1, HDMI In - 2, RJ45 - 1, Mic in - 1, Earphone – 1	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.
314	69	Item No. 26 – Interactive Screen with Diagonal 75 inches with camera & Mic	Touch glass - 4 mm tempered glass or better	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable.
315	69	Item No. 26 – Interactive Screen with Diagonal 75 inches with camera & Mic	Touch response time: 6ms or better	Touch response time: 8 ms or better.
316	69	Item No. 26 – Interactive Screen with Diagonal 75 inches with camera & Mic	Camera - 48MP AI camera with inbuilt 6-microphone array	Camera and microphone: The specified AI camera and microphone array may be integrated or supplied as an external OEM/OEM-authorized unit as part of the standard supply, provided the complete solution meets or exceeds the specified resolution, AI framing/tracking, pickup and conferencing functions and carries a unified warranty.
317	69	Item No. 26 – Interactive Screen with Diagonal 75 inches with camera & Mic	Touch glass - 4 mm tempered glass or better	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable.
318	69	Item No. 26 – Interactive Screen with Diagonal 75 inches with camera & Mic	Touch response time: 6ms or better	Touch response time: 8 ms or better.
319	69	Item No. 26 – Interactive Screen with Diagonal 75 inches with camera & Mic	Camera - 48MP AI camera with inbuilt 6-microphone array	Camera and microphone: The specified AI camera and microphone array may be integrated or supplied as an external OEM/OEM-authorized unit as part of the standard supply, provided the complete solution meets or exceeds the specified resolution, AI framing/tracking, pickup and conferencing functions and carries a unified warranty.
320	69	Item No. 26 – Interactive Screen with Diagonal 75 inches with camera & Mic	Touch glass - 4 mm tempered glass or better	Protection glass: Minimum 3 mm tempered/ toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable.
321	70	Item No. 27 – Interactive Screen with Diagonal 86 inches with camera & Mic	Connectivity minimum ports: USB 3.0 Type A - 3, USB Type C - 1, HDMI In -2, RJ45 - 1, Mic in - 1, Earphone – 1	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.
322	70	Item No. 27 – Interactive Screen with Diagonal 86 inches with camera & Mic	Connectivity minimum ports - USB 3.0 Type A - 3, USB Type C - 1, HDMI In - 2, RJ45 - 1, Mic in - 1, Earphone – 1	Connectivity (minimum): 3 × USB Type-A ports, of which at least 1 shall be USB 3.0 or higher and the remaining may be USB 2.0 or higher; 1 × USB Type-C; 2 × HDMI input; 1 × RJ45; microphone input and earphone/audio output. Equivalent audio connectivity may be accepted with the required adapter supplied.
323	70	Item No. 27 – Interactive Screen with Diagonal 86 inches with camera & Mic	Brightness - 450 nits or higher	Brightness: 400 nits or higher (typical).

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
324	70	Item No. 27 – Interactive Screen with Diagonal 86 inches with camera & Mic	Touch glass - 4 mm tempered glass or better	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable.
325	70	Item No. 27 – Interactive Screen with Diagonal 86 inches with camera & Mic	Touch response time: 6ms or better	Touch response time: 8 ms or better.
326	70	Item No. 27 – Interactive Screen with Diagonal 86 inches with camera & Mic	Camera - 48MP AI camera with inbuilt 6-microphone array	Camera and microphone: The specified AI camera and microphone array may be integrated or supplied as an external OEM/OEM-authorized unit as part of the standard supply, provided the complete solution meets or exceeds the specified resolution, AI framing/tracking, pickup and conferencing functions and carries a unified warranty.
327	70	Item No. 28 – Interactive Screen with Diagonal 98 inches with camera & Mic	Brightness - 500 nits or higher	Brightness: 400 nits or higher (typical).
328	70	Item No. 28 – Interactive Screen with Diagonal 98 inches with camera & Mic	CPU: Octa-Core or better	Processor: Quad-core or better OEM processor/SoC capable of smooth 4K display, touch, whiteboard, casting and multitasking operation. No specific processor model shall be mandatory; compliance shall be supported by the OEM datasheet/undertaking.
329	70	Item No. 28 – Interactive Screen with Diagonal 98 inches with camera & Mic	Storage(ROM) - 128 GB or higher	Internal storage: 64 GB or higher.
330	70	Item No. 28 – Interactive Screen with Diagonal 98 inches with camera & Mic	OS: Android 14.0 or better	Operating system: Android 13 or later, with OEM security updates and support during the warranty period.
331	70	Item No. 28 – Interactive Screen with Diagonal 98 inches with camera & Mic	Camera: 48MP AI Camera with inbuilt 6-microphone array	Camera and microphone: The specified AI camera and microphone array may be integrated or supplied as an external OEM/OEM-authorized unit as part of the standard supply, provided the complete solution meets or exceeds the specified resolution, AI framing/tracking, pickup and conferencing functions and carries a unified warranty.
332	70	Item No. 28 – Interactive Screen with Diagonal 98 inches with camera & Mic	Speakers: 20-Watt x 2 speakers or better	Built-in audio: Minimum 15 W × 2 speakers. A higher-output built-in or supplied external audio system shall be acceptable.
333	70	Item No. 28 – Interactive Screen with Diagonal 98 inches with camera & Mic	Bluetooth version 5.2 or higher	Bluetooth: Version 5.0 or higher.
334	70	Item No. 27 – Interactive Screen with Diagonal 86 inches with camera & Mic	Brightness - 450 nits or higher	Brightness: 400 nits or higher (typical).
335	70	Item No. 27 – Interactive Screen with Diagonal 86 inches with camera & Mic	Touch glass - 4 mm tempered glass or better	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable.
336	70	Item No. 27 – Interactive Screen with Diagonal 86 inches with camera & Mic	Touch response time: 6ms or better	Touch response time: 8 ms or better.
337	70	Item No. 27 – Interactive Screen with Diagonal 86 inches with camera & Mic	Camera - 48MP AI camera with inbuilt 6-microphone array	Camera and microphone: The specified AI camera and microphone array may be integrated or supplied as an external OEM/OEM-authorized unit as part of the standard supply, provided the complete solution meets or exceeds the specified resolution, AI framing/tracking, pickup and conferencing functions and carries a unified warranty.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
338	70	Item No. 28 – Interactive Screen with Diagonal 98 inches with camera & Mic	Brightness - 500 nits or higher	Brightness: 400 nits or higher (typical).
339	70	Item No. 28 – Interactive Screen with Diagonal 98 inches with camera & Mic	CPU: Octa-Core or better	Processor: Quad-core or better OEM processor/SoC capable of smooth 4K display, touch, whiteboard, casting and multitasking operation. No specific processor model shall be mandatory; compliance shall be supported by the OEM datasheet/undertaking.
340	70	Item No. 28 – Interactive Screen with Diagonal 98 inches with camera & Mic	Storage(ROM) - 128 GB or higher	Internal storage: 64 GB or higher.
341	70	Item No. 28 – Interactive Screen with Diagonal 98 inches with camera & Mic	OS: Android 14.0 or better	Operating system: Android 13 or later, with OEM security updates and support during the warranty period.
342	70	Item No. 28 – Interactive Screen with Diagonal 98 inches with camera & Mic	Camera: 48MP AI Camera with inbuilt 6-microphone array	Camera and microphone: The specified AI camera and microphone array may be integrated or supplied as an external OEM/OEM-authorized unit as part of the standard supply, provided the complete solution meets or exceeds the specified resolution, AI framing/tracking, pickup and conferencing functions and carries a unified warranty.
343	70	Item No. 28 – Interactive Screen with Diagonal 98 inches with camera & Mic	Speakers: 20-Watt x 2 speakers or better	Built-in audio: Minimum 15 W × 2 speakers. A higher-output built-in or supplied external audio system shall be acceptable.
344	70	Item No. 28 – Interactive Screen with Diagonal 98 inches with camera & Mic	Bluetooth version 5.2 or higher	Bluetooth: Version 5.0 or higher.
345	70	Item No. 27 – Interactive Screen with Diagonal 86 inches with camera & Mic	Touch glass - 4 mm tempered glass or better	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable.
346	71	Item 29-Interactive Flat Panel	Touch glass - 4 mm tempered glass or better	Protection glass: Minimum 3 mm tempered/toughened anti-glare glass, 7H hardness or better; 3.2 mm or 4 mm glass shall also be acceptable.
347	72	Item No. 30 : Interactive Screen with Diagonal 65 inch (EDLA certified)	Brightness - 450 nits or higher	Brightness: 400 nits or higher (typical).
348	72	Item No. 30 : Interactive Screen with Diagonal 65 inch (EDLA certified)	Contrast ratio - 1100:1 or higher	Contrast ratio: 1100:1 or higher (native/static). No change; any higher offered value shall be acceptable.
349	72	Item No. 30 : Interactive Screen with Diagonal 65 inch (EDLA certified)	Storage (ROM) - 64 GB or higher	Storage: Minimum 64 GB. An offered configuration with 128 GB or higher shall be compliant.
350	72	Item No. 30 : Interactive Screen with Diagonal 65 inch (EDLA certified)	Android 14.0 or better (EDLA-certified)	Operating system: Android 14 or later with valid Google EDLA certification for the offered model. An offered model upgradable to a later Android version shall be acceptable.
351	72	Item No. 30 : Interactive Screen with Diagonal 65 inch (EDLA certified)	Bluetooth version 5.0 or higher	Bluetooth: Version 5.2 or higher. An offered version 5.3 or later shall be compliant.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
352	73	Item 31-Interactive Flat Panel	Connectivity: 3× USB 3.0 Type-A; Mic-in; Earphone	Connectivity: At least 2 × USB Type-A ports, including at least 1 × USB 3.0 or higher, and 1 × USB Type-C. Microphone/earphone functions may be provided through dedicated 3.5 mm ports or equivalent USB/USB-C/HDMI digital audio interfaces; any required adapters shall be included.
353	73	Item 31-Interactive Flat Panel	Magnetic Pen Holder: Required	Stylus storage: Magnetic pen holder, integrated pen tray/slot, clip or equivalent secure holder shall be acceptable. Required styluses shall be supplied.
354	73	Item No. 31 : Interactive Screen with Diagonal 75 inch (EDLA certified)	Brightness - 450 nits or higher	Brightness: 400 nits or higher (typical).
355	73	Item No. 31 : Interactive Screen with Diagonal 75 inch (EDLA certified)	Contrast ratio - 1100:1 or higher	Contrast ratio: 1100:1 or higher (native/static). No change; any higher offered value shall be acceptable.
356	73	Item No. 31 : Interactive Screen with Diagonal 75 inch (EDLA certified)	Storage (ROM) - 64 GB or higher	Storage: Minimum 64 GB. An offered configuration with 128 GB or higher shall be compliant.
357	73	Item No. 31 : Interactive Screen with Diagonal 75 inch (EDLA certified)	Android 14.0 or better (EDLA-certified)	Operating system: Android 14 or later with valid Google EDLA certification for the offered model. An offered model upgradable to a later Android version shall be acceptable.
358	73	Item No. 31 : Interactive Screen with Diagonal 75 inch (EDLA certified)	Bluetooth version 5.0 or higher	Bluetooth: Version 5.2 or higher. An offered version 5.3 or later shall be compliant.
359	74	Item 32- Interactive Flat Panel	Brightness: 450/500 nits or higher	Brightness: 400 nits or higher (typical).
360	74	Item 32- Interactive Flat Panel	Speakers: 20 W × 2 or better	Built-in audio: Minimum 15 W × 2 speakers. A higher-output built-in or supplied external audio system shall be acceptable.
361	74	Item 32- Interactive Flat Panel	WiFi : Wi-Fi 6 / Wi-Fi 6E or better	Wireless: Dual-band Wi-Fi 5 (802.11ac) or higher. Wi-Fi 6/6E is preferred and shall be accepted as higher compliance.
362	74	Item No. 32 : Interactive Screen with Diagonal 86 inch (EDLA certified)	Brightness - 500 nits or higher	Brightness: 400 nits or higher (typical).
363	74	Item No. 32 : Interactive Screen with Diagonal 86 inch (EDLA certified)	Contrast ratio - 1100:1 or higher	Contrast ratio: 1100:1 or higher (native/static). No change; any higher offered value shall be acceptable.
364	74	Item No. 32 : Interactive Screen with Diagonal 86 inch (EDLA certified)	Storage (ROM) - 64 GB or higher	Storage: Minimum 64 GB. An offered configuration with 128 GB or higher shall be compliant.
365	74	Item No. 32 : Interactive Screen with Diagonal 86 inch (EDLA certified)	Android 14.0 or better (EDLA-certified)	Operating system: Android 14 or later with valid Google EDLA certification for the offered model. An offered model upgradable to a later Android version shall be acceptable.
366	74	Item No. 32 : Interactive Screen with Diagonal 86 inch (EDLA certified)	Bluetooth version 5.0 or higher	Bluetooth: Version 5.2 or higher. An offered version 5.3 or later shall be compliant.
367	75	Item 33 - 98" Intractive Screen		No change. The item shall remain an interactive display of the specified size and shall meet all published touch and interactive functionality requirements.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
368	76	Item 34 - 110" Intractive Screen	Diagonal Size: 110" or higher	No change. The item shall remain an interactive display of the specified size and shall meet all published touch and interactive functionality requirements.
369	78	Item No. 37: Digital Podium:	Construction: The Podium shall be wheel mounted capable of moving in all directions with a facility of lock them while the electronic podium is in use. The enclosure shall be made of Polymer Powder Coated Steel Body designed to work in suitable environmental conditions. The wooden top shall have lock and key and should have a sliding cover for opening/closing easily. The Podium should have housing and connectivity for Visual Presenter while the visualiser is in use and not in use. At the time of using the Visualiser, drawer can be opened, and Visualiser can be used. The construction of the podium should be such that, while the podium is locked and not is use, there should not be any port exposed/ visible on the outer body for breakage/mishandling.	Construction: Lockable wheel-mounted powder-coated steel podium with a durable wooden/laminated or metallic top, sliding/lockable cover, protected internal housing for the visual presenter and concealed ports when closed. All exposed edges shall be safely finished.
370	78	Item No. 37: Digital Podium:	Contrast ratio - 1200:1 or higher	Display contrast ratio: 1000:1 or higher (native/static).
371	78	Item No. 37: Digital Podium:	Touch Type : Pressure-sensitive, cordless, battery-free	Touch input: Finger touch and compatible stylus/pen through PCAP, IR or equivalent technology. The pen may be passive/battery-free or active, provided all required accessories are supplied.
372	78	Item No. 37: Digital Podium:	Touch accuracy: ±0.5mm(center); ±1mm(edge)	Touch accuracy: ±2 mm or better across the active touch area.
373	78	Item No. 37: Digital Podium:	Control Buttons: Power, Menu, Auto image adjust, up/down or more	Display controls: Power, menu/settings and image/level adjustment shall be available through physical keys, on-screen controls, remote control or an integrated controller; dedicated buttons for every function are not mandatory.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
374	78	Item No. 37: Digital Podium:	Pen Type - Battery Free Pen	Pen: Passive/battery-free, rechargeable or battery-powered compatible pen shall be accepted. Any required charger/batteries and at least one spare set for the warranty period shall be supplied.
375	78	Item No. 37: Digital Podium:	Display Stand: Should support tilting and Table standing type	Display mount/stand: The display shall support stable tilt adjustment and shall be securely integrated with the podium. A separate table-standing configuration is not mandatory.
376	78	Item No. 37: Digital Podium:	Ports on front panel of controller (minimum): VGA, HDMI, USB3.0x2, Audio IN, RCA, Lan in/Out, RS232 or more	Controller connectivity may be distributed between the front/rear controller panel and integrated PC. Minimum overall interfaces: 2 × HDMI input, 1 × HDMI output, 2 × USB Type-A including 1 × USB 3.0, audio input and output (analogue or digital), and LAN. USB-C may be offered. VGA, RCA and RS232 are not mandatory where equivalent digital connectivity/control is provided; required adapters shall be included.
377	78	Item No. 37: Digital Podium:	Buttons on front Panel of Controller (Minimum) Push buttons to control Volume Up& Down, Volume Mute and to switch sources of HDMI Visual Presenter, VGA Visual Presenter, HDMI Laptop, PC HDMI, VGA Laptop, VGA PC and Controller Power On/Off,	Controller operation: Volume up/down, mute, source selection and power control shall be available through physical buttons, touch controls, remote control or software. Dedicated buttons for each named source are not mandatory.
378	78	Item No. 37: Digital Podium:	Ports on Rear Panel of Controller (Minimum) USB 3.0 X 2, VGA Input x 2, VGA Output x 2, RCA Audio IN X 1, RCA Audio Output x 2, HDMI Inputx2,HDMI Outputx2 ,	Rear/system interfaces shall include at least 1 × HDMI output, 1 × USB 3.0, audio/speaker output and microphone input; LAN/PoE or equivalent network connectivity shall be provided where required. VGA and RCA interfaces are not mandatory if equivalent digital interfaces and necessary adapters are supplied.
379	78	Item No. 37: Digital Podium:	Gooseneck Microphone Gooseneck Microphone with XLR output. It should be Phantom powered so that there is no requirement of batteries thereby eliminating consumable cost. The gooseneck length should be at least 21.5 inch with ON/OFF switch and with LED light indicating ON/OFF status. The gooseneck microphone shall be permanently polarised condenser, highly directional featuring hyper cardioid /lobar directivity.	Gooseneck microphone: XLR output, phantom powered, on/off control with status indication, suitable podium-length flexible neck, and cardioid, super-cardioid, hyper-cardioid or lobar pickup pattern.
380	78	Item No. 37: Digital Podium:	Builtin amplifier Power Amplifier: Class D Rated Power : 250 W or better Mic Input : Minimum 4 input or better Line Input : Minimum 2 input or better	Amplifier: Class-D DSP amplifier, minimum 200 W rated output or adequate matched output for the supplied speakers, with at least 2 microphone inputs and 2 line/audio inputs.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
381	78	Item No. 37: Digital Podium:	Speakers: Two speakers of Minimum 100 W each shall be a part of standard supply. Speaker Type : 2 Way drivers Effective frequency range : 100Hz –17 kHz Rated power : 100 watts Sensitivity : 90 dB or Better Impedance : 8Ω ohm LF transducer : 8-inch woofer or better HF transducer : 2-inch tweeter or better Mounting : With mounting bracket fixed by screw	Speaker system: Minimum 200 W aggregate rated output, using either 2 × 100 W or 4 × 50 W (or an equivalent configuration), two-way design, nominal 8-ohm system where applicable, with suitable mounting brackets and coverage for the intended room.
382	78	Item No. 37: Digital Podium:	Construction: The Podium shall be wheel mounted capable of moving in all directions with a facility of lock them while the electronic podium is in use. The enclosure shall be made of Polymer Powder Coated Steel Body designed to work in suitable environmental conditions. The wooden top shall have lock and key and should have a sliding cover for opening/closing easily. The Podium should have housing and connectivity for Visual Presenter while the visualiser is in use and not in use. At the time of using the Visualiser, drawer can be opened, and Visualiser can be used. The construction of the podium should be such that, while the podium is locked and not is use, there should not be any port exposed/ visible on the outer body for breakage/mishandling.	Construction: Lockable wheel-mounted powder-coated steel podium with a durable wooden/laminated or metallic top, sliding/lockable cover, protected internal housing for the visual presenter and concealed ports when closed. All exposed edges shall be safely finished.
383	78	Item No. 37: Digital Podium:	Contrast Ratio - 1200:1 or higher	Display contrast ratio: 1000:1 or higher (native/static).
384	78	Item No. 37: Digital Podium:	Touch Type Pressure-sensitive, cordless, battery-free	Touch input: Finger touch and compatible stylus/pen through PCAP, IR or equivalent technology. The pen may be passive/battery-free or active, provided all required accessories are supplied.
385	78	Item No. 37: Digital Podium:	Touch accuracy ±0.5mm(center); ±1mm(edge)	Touch accuracy: ±2 mm or better across the active touch area.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
386	78	Item No. 37: Digital Podium:	Control buttons: Power, Menu, Auto image adjust, up/down or more	Display controls: Power, menu/settings and image/level adjustment shall be available through physical keys, on-screen controls, remote control or an integrated controller; dedicated buttons for every function are not mandatory.
387	78	Item No. 37: Digital Podium:	Pen Type - Battery Free Pen	Pen: Passive/battery-free, rechargeable or battery-powered compatible pen shall be accepted. Any required charger/batteries and at least one spare set for the warranty period shall be supplied.
388	78	Item No. 37: Digital Podium:	Display stand: Should support tilting and Table standing type	Display mount/stand: The display shall support stable tilt adjustment and shall be securely integrated with the podium. A separate table-standing configuration is not mandatory.
389	78	Item No. 37: Digital Podium:	Ports on front Panel of Controller (Minimum) VGA, HDMI, USB3.0x2, Audio IN, RCA, Lan in/Out, RS232 or more	Controller connectivity may be distributed between the front/rear controller panel and integrated PC. Minimum overall interfaces: 2 × HDMI input, 1 × HDMI output, 2 × USB Type-A including 1 × USB 3.0, audio input and output (analogue or digital), and LAN. USB-C may be offered. VGA, RCA and RS232 are not mandatory where equivalent digital connectivity/control is provided; required adapters shall be included.
390	78	Item No. 37: Digital Podium:	Buttons on front Panel of Controller (Minimum) Push buttons to control Volume Up& Down, Volume Mute and to switch sources of HDMI Visual Presenter, VGA Visual Presenter, HDMI Laptop, PC HDMI, VGA Laptop, VGA PC and Controller Power On/Off,	Controller operation: Volume up/down, mute, source selection and power control shall be available through physical buttons, touch controls, remote control or software. Dedicated buttons for each named source are not mandatory.
391	78	Item No. 37: Digital Podium:	Ports on Rear Panel of Controller (Minimum) USB 3.0 X 2, VGA Input x 2, VGA Output x 2, RCA Audio IN X 1, RCA Audio Output x 2, HDMI Inputx2,HDMI Outputx2 ,	Rear/system interfaces shall include at least 1 × HDMI output, 1 × USB 3.0, audio/speaker output and microphone input; LAN/PoE or equivalent network connectivity shall be provided where required. VGA and RCA interfaces are not mandatory if equivalent digital interfaces and necessary adapters are supplied.
392	78	Item No. 37: Digital Podium:	Gooseneck Microphone with XLR output. It should be Phantom powered so that there is no requirement of batteries thereby eliminating consumable cost. The gooseneck length should be at least 21.5 inch with ON/OFF switch and with LED light indicating ON/OFF status. The gooseneck microphone shall be permanently polarised condenser, highly directional featuring hyper cardioid /lobar directivity.	Gooseneck microphone: XLR output, phantom powered, on/off control with status indication, suitable podium-length flexible neck, and cardioid, super-cardioid, hyper-cardioid or lobar pickup pattern.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
393	78	Item No. 37: Digital Podium:	Built in Amplifier Power Amplifier: Class D Rated Power : 250 W or better Mic Input : Minimum 4 input or better Line Input : Minimum 2 input or better	Amplifier: Class-D DSP amplifier, minimum 200 W rated output or adequate matched output for the supplied speakers, with at least 2 microphone inputs and 2 line/audio inputs.
394	78	Item No. 37: Digital Podium:	Speakers: Two speakers of Minimum 100 W each shall be a part of standard supply. Speaker Type : 2 Way drivers Effective frequency range : 100Hz –17 kHz Rated power : 100 watts Sensitivity : 90 dB or Better Impedance : 8Ω ohm LF transducer : 8-inch woofer or better HF transducer : 2-inch tweeter or better Mounting : With mounting bracket fixed by screw	Speaker system: Minimum 200 W aggregate rated output, using either 2 × 100 W or 4 × 50 W (or an equivalent configuration), two-way design, nominal 8-ohm system where applicable, with suitable mounting brackets and coverage for the intended room.
395	78	Item No. 37: Digital Podium	39. Ports on front Panel of Controller (Minimum): VGA, HDMI, USB3.0x2, Audio IN, RCA, Lan in/Out, RS232 or more	Controller connectivity may be distributed between the front/rear controller panel and integrated PC. Minimum overall interfaces: 2 × HDMI input, 1 × HDMI output, 2 × USB Type-A including 1 × USB 3.0, audio input and output (analogue or digital), and LAN. USB-C may be offered. VGA, RCA and RS232 are not mandatory where equivalent digital connectivity/control is provided; required adapters shall be included.
396	78	Item No. 37: Digital Podium with Front Display	39. Ports on front Panel of Controller (Minimum): VGA, HDMI, USB3.0x2, Audio IN, RCA, Lan in/Out, RS232 or more	Controller connectivity may be distributed between the front/rear controller panel and integrated PC. Minimum overall interfaces: 2 × HDMI input, 1 × HDMI output, 2 × USB Type-A including 1 × USB 3.0, audio input and output (analogue or digital), and LAN. USB-C may be offered. VGA, RCA and RS232 are not mandatory where equivalent digital connectivity/control is provided; required adapters shall be included.
397	79	Item No. 37: Digital Podium	39. Ports on front Panel of Controller (Minimum): VGA, HDMI, USB3.0x2, Audio IN, RCA, Lan in/Out, RS232 or more	Controller connectivity may be distributed between the front/rear controller panel and integrated PC. Minimum overall interfaces: 2 × HDMI input, 1 × HDMI output, 2 × USB Type-A including 1 × USB 3.0, audio input and output (analogue or digital), and LAN. USB-C may be offered. VGA, RCA and RS232 are not mandatory where equivalent digital connectivity/control is provided; required adapters shall be included.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
398	79	Item No. 37: Digital Podium	39. Ports on front Panel of Controller (Minimum): VGA, HDMI, USB3.0x2, Audio IN, RCA, Lan in/Out, RS232 or more	Controller connectivity may be distributed between the front/rear controller panel and integrated PC. Minimum overall interfaces: 2 × HDMI input, 1 × HDMI output, 2 × USB Type-A including 1 × USB 3.0, audio input and output (analogue or digital), and LAN. USB-C may be offered. VGA, RCA and RS232 are not mandatory where equivalent digital connectivity/control is provided; required adapters shall be included.
399	79	Item No. 37 - Digital Podium	39. Ports on front Panel of Controller (Minimum): VGA, HDMI, USB3.0x2, Audio IN, RCA, Lan in/Out, RS232 or more	Controller connectivity may be distributed between the front/rear controller panel and integrated PC. Minimum overall interfaces: 2 × HDMI input, 1 × HDMI output, 2 × USB Type-A including 1 × USB 3.0, audio input and output (analogue or digital), and LAN. USB-C may be offered. VGA, RCA and RS232 are not mandatory where equivalent digital connectivity/control is provided; required adapters shall be included.
400	80	Item No. 38: Digital Podium with Front Display	Construction: The Podium shall be wheel mounted capable of moving in all directions with a facility of lock them while the electronic podium is in use. The enclosure shall be made of Polymer Powder Coated Steel Body with wooden top panels, designed to work in suitable environmental conditions. The podium shall have lock and key and should have a sliding cover for opening/closing easily. The Podium should have housing and connectivity for Visual Presenter while the visualiser is in use and not in use. At the time of using the Visualiser, drawer can be opened and Visualiser can be used. The construction of the podium should be such that, while the podium is locked and not is use, there should not be any port exposed/ visible on the outer body for breakage/mishandling.	Construction: Lockable wheel-mounted powder-coated steel podium with a durable wooden/laminated or metallic top, sliding/lockable cover, protected internal housing for the visual presenter and concealed ports when closed. All exposed edges shall be safely finished.
401	80	Item No. 38: Digital Podium with Front Display	Contrast ratio - 1200:1 or higher	Display contrast ratio: 1000:1 or higher (native/static).
402	80	Item No. 38: Digital Podium with Front Display	Touch Type - Pressure-sensitive, cordless, battery-free	Touch input: Finger touch and compatible stylus/pen through PCAP, IR or equivalent technology. The pen may be passive/battery-free or active, provided all required accessories are supplied.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
403	80	Item No. 38: Digital Podium with Front Display	Touch Accuracy: ±0.5mm(center); ±1mm(edge)	Touch accuracy: ±2 mm or better across the active touch area.
404	80	Item No. 38: Digital Podium with Front Display	Control Buttons: Power, Menu, +/-, Auto or more	Display controls: Power, menu/settings and image/level adjustment shall be available through physical keys, on-screen controls, remote control or an integrated controller; dedicated buttons for every function are not mandatory.
405	80	Item No. 38: Digital Podium with Front Display	Pen Type: Battery Free	Pen: Passive/battery-free, rechargeable or battery-powered compatible pen shall be accepted. Any required charger/batteries and at least one spare set for the warranty period shall be supplied.
406	80	Item No. 38: Digital Podium with Front Display	Display Stand: Should support tilting and Table standing type	Display mount/stand: The display shall support stable tilt adjustment and shall be securely integrated with the podium. A separate table-standing configuration is not mandatory.
407	80	Item No. 38: Digital Podium with Front Display	Ports on front Panel of Controller (Minimum): VGA, HDMI, USB3.0x2,Audio IN, RCA, Lan in/Out, RS232 or more or more	Controller connectivity may be distributed between the front/rear controller panel and integrated PC. Minimum overall interfaces: 2 × HDMI input, 1 × HDMI output, 2 × USB Type-A including 1 × USB 3.0, audio input and output (analogue or digital), and LAN. USB-C may be offered. VGA, RCA and RS232 are not mandatory where equivalent digital connectivity/control is provided; required adapters shall be included.
408	80	Item No. 38: Digital Podium with Front Display	Buttons on front Panel of Controller (Minimum): Push buttons to control Volume Up& Down, Volume Mute and to switch sources of HDMI Visual Presenter, VGA Visual Presenter, HDMI Laptop, PC HDMI, VGA Laptop, VGA PC and Controller Power On/Off,	Controller operation: Volume up/down, mute, source selection and power control shall be available through physical buttons, touch controls, remote control or software. Dedicated buttons for each named source are not mandatory.
409	80	Item No. 38: Digital Podium with Front Display	Ports on Rear Panel of Controller (Minimum): USB 3.0 X 2, VGA Input x 2, VGA Output x 2, RCA Audio IN X 1,RCA Audio Output x 2,HDMI Inputx2,HDMI Outputx2	Rear/system interfaces shall include at least 1 × HDMI output, 1 × USB 3.0, audio/speaker output and microphone input; LAN/PoE or equivalent network connectivity shall be provided where required. VGA and RCA interfaces are not mandatory if equivalent digital interfaces and necessary adapters are supplied.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
410	80	Item No. 38: Digital Podium with Front Display	Gooseneck Microphone Gooseneck Microphone with XLR output. It should be Phantom powered so that there is no requirement of batteries thereby eliminating consumable cost. The gooseneck length should be at least 21.5cm with ON/OFF switch and with LED light indicating ON/OFF status. The gooseneck microphone shall be permanently polarised condenser, highly directional featuring hyper cardioid /lobar directivity.	Gooseneck microphone: XLR output, phantom powered, on/off control with status indication, suitable podium-length flexible neck, and cardioid, super-cardioid, hyper-cardioid or lobar pickup pattern.
411	80	Item No. 38: Digital Podium with Front Display	Construction: The Podium shall be wheel mounted capable of moving in all directions with a facility of lock them while the electronic podium is in use. The enclosure shall be made of Polymer Powder Coated Steel Body designed to work in suitable environmental conditions. The wooden top shall have lock and key and should have a sliding cover for opening/closing easily. The Podium should have housing and connectivity for Visual Presenter while the visualiser is in use and not in use. At the time of using the Visualiser, drawer can be opened, and Visualiser can be used. The construction of the podium should be such that, while the podium is locked and not is use, there should not be any port exposed/ visible on the outer body for breakage/mishandling.	Construction: Lockable wheel-mounted powder-coated steel podium with a durable wooden/laminated or metallic top, sliding/lockable cover, protected internal housing for the visual presenter and concealed ports when closed. All exposed edges shall be safely finished.
412	80	Item No. 38: Digital Podium with Front Display	Contrast Ratio - 1200:1 or higher	Display contrast ratio: 1000:1 or higher (native/static).
413	80	Item No. 38: Digital Podium with Front Display	Touch Type Pressure-sensitive, cordless, battery-free	Touch input: Finger touch and compatible stylus/pen through PCAP, IR or equivalent technology. The pen may be passive/battery-free or active, provided all required accessories are supplied.
414	80	Item No. 38: Digital Podium with Front Display	Touch accuracy ±0.5mm(center); ±1mm(edge)	Touch accuracy: ±2 mm or better across the active touch area.
415	80	Item No. 38: Digital Podium with Front Display	Control buttons: Power, Menu, Auto image adjust, up/down or more	Display controls: Power, menu/settings and image/level adjustment shall be available through physical keys, on-screen controls, remote control or an integrated controller; dedicated buttons for every function are not mandatory.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
416	80	Item No. 38: Digital Podium with Front Display	Pen Type - Battery Free Pen	Pen: Passive/battery-free, rechargeable or battery-powered compatible pen shall be accepted. Any required charger/batteries and at least one spare set for the warranty period shall be supplied.
417	80	Item No. 38: Digital Podium with Front Display	Display stand: Should support tilting and Table standing type	Display mount/stand: The display shall support stable tilt adjustment and shall be securely integrated with the podium. A separate table-standing configuration is not mandatory.
418	80	Item No. 38: Digital Podium with Front Display	Ports on front Panel of Controller (Minimum) VGA, HDMI, USB3.0x2, Audio IN, RCA, Lan in/Out, RS232 or more	Controller connectivity may be distributed between the front/rear controller panel and integrated PC. Minimum overall interfaces: 2 × HDMI input, 1 × HDMI output, 2 × USB Type-A including 1 × USB 3.0, audio input and output (analogue or digital), and LAN. USB-C may be offered. VGA, RCA and RS232 are not mandatory where equivalent digital connectivity/control is provided; required adapters shall be included.
419	80	Item No. 38: Digital Podium with Front Display	Buttons on front Panel of Controller (Minimum) Push buttons to control Volume Up& Down, Volume Mute and to switch sources of HDMI Visual Presenter, VGA Visual Presenter, HDMI Laptop, PC HDMI, VGA Laptop, VGA PC and Controller Power On/Off,	Controller operation: Volume up/down, mute, source selection and power control shall be available through physical buttons, touch controls, remote control or software. Dedicated buttons for each named source are not mandatory.
420	80	Item No. 38: Digital Podium with Front Display	Ports on Rear Panel of Controller (Minimum) USB 3.0 X 2, VGA Input x 2, VGA Output x 2, RCA Audio IN X 1, RCA Audio Output x 2, HDMI Inputx2,HDMI Outputx2 ,	Rear/system interfaces shall include at least 1 × HDMI output, 1 × USB 3.0, audio/speaker output and microphone input; LAN/PoE or equivalent network connectivity shall be provided where required. VGA and RCA interfaces are not mandatory if equivalent digital interfaces and necessary adapters are supplied.
421	80	Item No. 38: Digital Podium with Front Display	Gooseneck Microphone with XLR output. It should be Phantom powered so that there is no requirement of batteries thereby eliminating consumable cost. The gooseneck length should be at least 21.5 cm with ON/OFF switch and with LED light indicating ON/OFF status. The gooseneck microphone shall be permanently polarised condenser, highly directional featuring hyper cardioid /lobar directivity.	Gooseneck microphone: XLR output, phantom powered, on/off control with status indication, suitable podium-length flexible neck, and cardioid, super-cardioid, hyper-cardioid or lobar pickup pattern.
422	82	Item No. 37: Digital Podium with front display	39. Ports on front Panel of Controller (Minimum): VGA, HDMI, USB3.0x2, Audio IN, RCA, Lan in/Out, RS232 or more	Controller connectivity may be distributed between the front/rear controller panel and integrated PC. Minimum overall interfaces: 2 × HDMI input, 1 × HDMI output, 2 × USB Type-A including 1 × USB 3.0, audio input and output (analogue or digital), and LAN. USB-C may be offered. VGA, RCA and RS232 are not mandatory where equivalent digital connectivity/control is provided; required adapters shall be included.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
423	82	Item No. 37- Digital Podium with Front Display	39. Ports on front Panel of Controller (Minimum): VGA, HDMI, USB3.0x2, Audio IN, RCA, Lan in/Out, RS232 or more	Controller connectivity may be distributed between the front/rear controller panel and integrated PC. Minimum overall interfaces: 2 × HDMI input, 1 × HDMI output, 2 × USB Type-A including 1 × USB 3.0, audio input and output (analogue or digital), and LAN. USB-C may be offered. VGA, RCA and RS232 are not mandatory where equivalent digital connectivity/control is provided; required adapters shall be included.
424	84	Item 39 – 135" All-in-One LED Display	Brightness : 800–1000 nits or higher	Brightness: 500 nits or higher for the indoor 135-inch COB LED display.
425	84	Item 39 – 135" All-in-One LED Display	Sound Bar - 40 W × 2 or better built-in	Audio: Integrated and/or supplied external audio system with minimum 40 W total rated output. All mounting, cabling and integration shall be included.
426	84	Item 39 – 135" All-in-One LED Display	2× USB 3.0	USB connectivity: At least 1 × USB 3.0 or higher, or equivalent USB-C high-speed interface, with any required adapter supplied.
427	84	Item 39 – 135" All-in-One LED Display	1× SPDIF	External audio output: SPDIF, HDMI ARC/eARC, 3.5 mm line-out or equivalent digital/analogue audio output shall be accepted.
428	84	Item 39 – 135" All-in-One LED Display	Operating system - Android 11 or latest	Operating system: Android 11 or later, Tizen, webOS or equivalent OEM commercial-display operating system supporting all specified signage, casting, remote-management and security-update functions. Required licences/subscriptions for the warranty period shall be included and disclosed.
429	84	Item 39 – 135" All-in-One LED Display	Processor : Quad-core A73 + Quad-core A53 ARM processor or better	Processor: OEM purpose-built multi-core display processor/SoC capable of Full-HD/4K multimedia processing, signage, casting and the specified smart functions. A particular ARM core combination shall not be mandatory; OEM evidence shall be submitted.
430	84	Item 39 – 135" All-in-One LED Display	RAM: 8 GB or better	Memory: Minimum 2 GB RAM, or the OEM-standard embedded memory architecture for a purpose-built commercial-display OS, provided all specified functions operate concurrently.
431	84	Item 39 – 135" All-in-One LED Display	Storage : 64 GB or better	Internal storage: Minimum 16 GB, with adequate usable capacity for the OS, applications and locally cached content required for all specified functions.
432	84	Item 39 – 135" All-in-One LED Display	Hotspot - Dual-band Wi-Fi + Hotspot + Bluetooth 5.1 or better	Wireless/network connectivity: Dual-band Wi-Fi and Bluetooth 5.0 or higher, or equivalent integrated wireless arrangement. Hotspot mode is desirable but shall not be mandatory where LAN/Wi-Fi infrastructure provides connectivity.
433	84	Item 39 – 135" All-in-One LED Display	Maximum Power consumption - 1550 W or better	Maximum power consumption: 1,600 W or lower for the complete 135-inch display. The OEM-rated maximum value shall be declared.
434	84	Item 39 – 135" All-in-One LED Display	Average Power Consumption - 520 W or better	Typical/average power consumption: 800 W or lower for the complete 135-inch display. The OEM-rated test condition and value shall be declared.
435	84	Item 39 – 135" All-in-One LED Display	Operating Temparature: -10 to +45°C or better	Operating temperature: 0°C to 40°C or wider.
436	84	Item 39 – 135" All-in-One LED Display	BIS Manufacturing location - BIS facility/manufacturing in India in OEM name	Certification: Valid BIS registration/certification for the offered model wherever legally applicable. Manufacturing location shall not by itself determine compliance; Make-in-India/local-content eligibility, if applicable, shall be assessed separately under the prevailing procurement order. Product catalogue shall be available on the OEM website.
437	84	Item 39 – 135" All-in-One LED Display	Brightness: 800–1000 nits or higher	Brightness: 500 nits or higher for the indoor 135-inch COB LED display.
438	84	Item 39 – 135" All-in-One LED Display	Sound Bar: 40 W × 2 or better built-in	Audio: Integrated and/or supplied external audio system with minimum 40 W total rated output. All mounting, cabling and integration shall be included.
439	84	Item 39 – 135" All-in-One LED Display	USB 3.0: 2× USB 3.0	USB connectivity: At least 1 × USB 3.0 or higher, or equivalent USB-C high-speed interface, with any required adapter supplied.
440	84	Item 39 – 135" All-in-One LED Display	1× SPDIF	External audio output: SPDIF, HDMI ARC/eARC, 3.5 mm line-out or equivalent digital/analogue audio output shall be accepted.
441	84	Item 39 – 135" All-in-One LED Display	Operating system: Android 11 or latest	Operating system: Android 11 or later, Tizen, webOS or equivalent OEM commercial-display operating system supporting all specified signage, casting, remote-management and security-update functions. Required licences/subscriptions for the warranty period shall be included and disclosed.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
442	84	Item 39 – 135" All-in-One LED Display	Processor : Quad-core A73 + Quad-core A53 ARM processor or better	Processor: OEM purpose-built multi-core display processor/SoC capable of Full-HD/4K multimedia processing, signage, casting and the specified smart functions. A particular ARM core combination shall not be mandatory; OEM evidence shall be submitted.
443	84	Item 39 – 135" All-in-One LED Display	RAM: 8 GB or better	Memory: Minimum 2 GB RAM, or the OEM-standard embedded memory architecture for a purpose-built commercial-display OS, provided all specified functions operate concurrently.
444	84	Item 39 – 135" All-in-One LED Display	Storage: 64 GB or better	Internal storage: Minimum 16 GB, with adequate usable capacity for the OS, applications and locally cached content required for all specified functions.
445	84	Item 39 – 135" All-in-One LED Display	Hotspot: Dual-band Wi-Fi + Hotspot + Bluetooth 5.1 or better	Wireless/network connectivity: Dual-band Wi-Fi and Bluetooth 5.0 or higher, or equivalent integrated wireless arrangement. Hotspot mode is desirable but shall not be mandatory where LAN/Wi-Fi infrastructure provides connectivity.
446	84	Item 39 – 135" All-in-One LED Display	Max. Power Consumption: 1550 W or better	Maximum power consumption: 1,600 W or lower for the complete 135-inch display. The OEM-rated maximum value shall be declared.
447	84	Item 39 – 135" All-in-One LED Display	Avg. Power Consumption: 520 W or better	Typical/average power consumption: 800 W or lower for the complete 135-inch display. The OEM-rated test condition and value shall be declared.
448	84	Item 39 – 135" All-in-One LED Display	Operating temparature: -10 to +45°C or better	Operating temperature: 0°C to 40°C or wider.
449	84	Item 39 – 135" All-in-One LED Display	BIS Manufacturing Location: BIS facility/manufacturing in India in OEM name	Certification: Valid BIS registration/certification for the offered model wherever legally applicable. Manufacturing location shall not by itself determine compliance; Make-in-India/local-content eligibility, if applicable, shall be assessed separately under the prevailing procurement order. Product catalogue shall be available on the OEM website.
450	85	Item 40 – 162" All-in-One LED Display	Brightness - 800–1000 nits or higher	Brightness: 600 nits or higher for the indoor 162-inch COB LED display.
451	85	Item 40 – 162" All-in-One LED Display	Display type: All-in-One LED Display	Display type: Integrated all-in-one or modular cabinet-type COB LED display supplied as a complete turnkey system with seamless assembly, controller, power system, audio, mounting, calibration and front serviceability.
452	85	Item 40 – 162" All-in-One LED Display	Viewing angle : H 170°; V 160°	Viewing angle: Minimum 160° horizontal and 160° vertical.
453	85	Item 40 – 162" All-in-One LED Display	2× USB 3.0	USB connectivity: At least 1 × USB 3.0 or higher, or equivalent USB-C high-speed interface, with any required adapter supplied.
454	85	Item 40 – 162" All-in-One LED Display	1× 3.5 mm Line Out	External audio output: SPDIF, HDMI ARC/eARC, 3.5 mm line-out or equivalent digital/analogue audio output shall be accepted.
455	85	Item 40 – 162" All-in-One LED Display	Operating system - Android 11 or latest	Operating system: Android 11 or later, Tizen, webOS or equivalent OEM commercial-display operating system supporting all specified signage, casting, remote-management and security-update functions. Required licences/subscriptions for the warranty period shall be included and disclosed.
456	85	Item 40 – 162" All-in-One LED Display	Processor : Quad-core A73 + Quad-core A53 ARM processor or better	Processor: OEM purpose-built multi-core display processor/SoC capable of Full-HD/4K multimedia processing, signage, casting and the specified smart functions. A particular ARM core combination shall not be mandatory; OEM evidence shall be submitted.
457	85	Item 40 – 162" All-in-One LED Display	RAM: 8 GB or better	Memory: Minimum 2 GB RAM, or the OEM-standard embedded memory architecture for a purpose-built commercial-display OS, provided all specified functions operate concurrently.
458	85	Item 40 – 162" All-in-One LED Display	Storage: 64 GB or better	Internal storage: Minimum 16 GB, with adequate usable capacity for the OS, applications and locally cached content required for all specified functions.
459	85	Item 40 – 162" All-in-One LED Display	Wireless connectivity: Dual-band Wi-Fi + Hotspot + Bluetooth 5.1 or better	Wireless/network connectivity: Dual-band Wi-Fi and Bluetooth 5.0 or higher, or equivalent integrated wireless arrangement. Hotspot mode is desirable but shall not be mandatory where LAN/Wi-Fi infrastructure provides connectivity.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
460	85	Item 40 – 162" All-in-One LED Display	Power consumption - Max 1790 W; Average 1032 W	Power consumption shall be declared as OEM-rated maximum and average W/m² and the corresponding calculated total for the offered active screen area. Calculated total shall not exceed 2,200 W maximum and 1,200 W average.
461	85	Item 40 – 162" All-in-One LED Display	Operating temparature: -10 to +45°C	Operating temperature: 0°C to 40°C or wider.
462	85	Item 40 – 162" All-in-One LED Display	BIS manufacturing facility in India	Certification: Valid BIS registration/certification for the offered model wherever legally applicable. Manufacturing location shall not by itself determine compliance; Make-in-India/local-content eligibility, if applicable, shall be assessed separately under the prevailing procurement order. Product catalogue shall be available on the OEM website.
463	85	Item 40 – 162" All-in-One LED Display	Brightness: 800–1000 nits or higher	Brightness: 600 nits or higher for the indoor 162-inch COB LED display.
464	85	Item 40 – 162" All-in-One LED Display	Display Type: All-in-One LED Display	Display type: Integrated all-in-one or modular cabinet-type COB LED display supplied as a complete turnkey system with seamless assembly, controller, power system, audio, mounting, calibration and front serviceability.
465	85	Item 40 – 162" All-in-One LED Display	Viewing Angle: H 170°; V 160°	Viewing angle: Minimum 160° horizontal and 160° vertical.
466	85	Item 40 – 162" All-in-One LED Display	2× USB 3.0	USB connectivity: At least 1 × USB 3.0 or higher, or equivalent USB-C high-speed interface, with any required adapter supplied.
467	85	Item 40 – 162" All-in-One LED Display	1× 3.5 mm Line Out	External audio output: SPDIF, HDMI ARC/eARC, 3.5 mm line-out or equivalent digital/analogue audio output shall be accepted.
468	85	Item 40 – 162" All-in-One LED Display	Operating system: Android 11 or latest	Operating system: Android 11 or later, Tizen, webOS or equivalent OEM commercial-display operating system supporting all specified signage, casting, remote-management and security-update functions. Required licences/subscriptions for the warranty period shall be included and disclosed.
469	85	Item 40 – 162" All-in-One LED Display	Processor: Quad-core A73 + Quad-core A53 ARM processor or better	Processor: OEM purpose-built multi-core display processor/SoC capable of Full-HD/4K multimedia processing, signage, casting and the specified smart functions. A particular ARM core combination shall not be mandatory; OEM evidence shall be submitted.
470	85	Item 40 – 162" All-in-One LED Display	RAM - 8 GB or better	Memory: Minimum 2 GB RAM, or the OEM-standard embedded memory architecture for a purpose-built commercial-display OS, provided all specified functions operate concurrently.
471	85	Item 40 – 162" All-in-One LED Display	Storage - 64 GB or better	Internal storage: Minimum 16 GB, with adequate usable capacity for the OS, applications and locally cached content required for all specified functions.
472	85	Item 40 – 162" All-in-One LED Display	wireless connectivity: Dual-band Wi-Fi + Hotspot + Bluetooth 5.1 or better	Wireless/network connectivity: Dual-band Wi-Fi and Bluetooth 5.0 or higher, or equivalent integrated wireless arrangement. Hotspot mode is desirable but shall not be mandatory where LAN/Wi-Fi infrastructure provides connectivity.
473	85	Item 40 – 162" All-in-One LED Display	Power Consumption: Max 1790 W; Average 1032 W	Power consumption shall be declared as OEM-rated maximum and average W/m² and the corresponding calculated total for the offered active screen area. Calculated total shall not exceed 2,200 W maximum and 1,200 W average.
474	85	Item 40 – 162" All-in-One LED Display	Operating temparature: -10 to +45°C	Operating temperature: 0°C to 40°C or wider.
475	85	Item 40 – 162" All-in-One LED Display	BIS manufacturing facility in India	Certification: Valid BIS registration/certification for the offered model wherever legally applicable. Manufacturing location shall not by itself determine compliance; Make-in-India/local-content eligibility, if applicable, shall be assessed separately under the prevailing procurement order. Product catalogue shall be available on the OEM website.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
476	94	Item No 46: English Language Lab Software Solution	Mobile Apps: The Language Lab Software should have Android & iOS supported Mobile App	Software access: The language-lab solution shall provide Android and/or iOS application access, a responsive web portal/web application, or an equivalent cross-platform interface supporting the required learner and administrator functions. It shall support current mainstream browsers/devices and include all licences for the contract period.
477	95	SECTION – 5 TECHNCIAL SPECIFICATIONS Item No 46: English Language Lab Software Solution	17. Mobile Apps: The Language Lab Software should have Android & iOS supported Mobile App	Software access: The language-lab solution shall provide Android and/or iOS application access, a responsive web portal/web application, or an equivalent cross-platform interface supporting the required learner and administrator functions. It shall support current mainstream browsers/devices and include all licences for the contract period.
478	95	Item No. 46: English Language Lab Software	Mobile Apps: The Language Lab Software should have Android & iOS supported Mobile App	Software access: The language-lab solution shall provide Android and/or iOS application access, a responsive web portal/web application, or an equivalent cross-platform interface supporting the required learner and administrator functions. It shall support current mainstream browsers/devices and include all licences for the contract period.
479	95	Item No. 46 - English Language Lab Software Solution	Mobile Apps: The Language Lab Software should have Android & iOS supported Mobile App	Software access: The language-lab solution shall provide Android and/or iOS application access, a responsive web portal/web application, or an equivalent cross-platform interface supporting the required learner and administrator functions. It shall support current mainstream browsers/devices and include all licences for the contract period.
480	98	Item No 47: English, Hindi & Sanskrit Language Lab Software Solution	Mobile Apps: The Language Lab Software should have Android & iOS supported Mobile App	Software access: The language-lab solution shall provide Android and/or iOS application access, a responsive web portal/web application, or an equivalent cross-platform interface supporting the required learner and administrator functions. It shall support current mainstream browsers/devices and include all licences for the contract period.
481	100	SECTION – 5 TECHNCIAL SPECIFICATIONS Item No 47: English, Hindi & Sanskrit Language Lab Software Solution	17. Mobile Apps: The Language Lab Software should have Android & iOS supported Mobile App	Software access: The language-lab solution shall provide Android and/or iOS application access, a responsive web portal/web application, or an equivalent cross-platform interface supporting the required learner and administrator functions. It shall support current mainstream browsers/devices and include all licences for the contract period.
482	100	Item No. 47: English, Hindi & Sanskrit Language Lab	Mobile Apps: The Language Lab Software should have Android & iOS supported Mobile App	Software access: The language-lab solution shall provide Android and/or iOS application access, a responsive web portal/web application, or an equivalent cross-platform interface supporting the required learner and administrator functions. It shall support current mainstream browsers/devices and include all licences for the contract period.
483	100	Item No. 47 – English, Hindi & Sanskrit Language Lab Software Solution	Mobile Apps: The Language Lab Software should have Android & iOS supported Mobile App	Software access: The language-lab solution shall provide Android and/or iOS application access, a responsive web portal/web application, or an equivalent cross-platform interface supporting the required learner and administrator functions. It shall support current mainstream browsers/devices and include all licences for the contract period.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
484	103	Item No 48: English, Hindi, Sanskrit, French & Spanish Language Lab Software Solution	Mobile Apps: The Language Lab Software should have Android & iOS supported Mobile App	Software access: The language-lab solution shall provide Android and/or iOS application access, a responsive web portal/web application, or an equivalent cross-platform interface supporting the required learner and administrator functions. It shall support current mainstream browsers/devices and include all licences for the contract period.
485	105	SECTION – 5 TECHNCIAL SPECIFICATIONS Item No 48: English, Hindi, Sanskrit, French & Spanish Language Lab Software Solution	17. Mobile Apps: The Language Lab Software should have Android & iOS supported Mobile App	Software access: The language-lab solution shall provide Android and/or iOS application access, a responsive web portal/web application, or an equivalent cross-platform interface supporting the required learner and administrator functions. It shall support current mainstream browsers/devices and include all licences for the contract period.
486	105	Item No. 48: Multilingual Langua Lab	Mobile Apps: The Language Lab Software should have Android & iOS supported Mobile App	Software access: The language-lab solution shall provide Android and/or iOS application access, a responsive web portal/web application, or an equivalent cross-platform interface supporting the required learner and administrator functions. It shall support current mainstream browsers/devices and include all licences for the contract period.
487	105	Item No. 48 – English, Hindi, Sanskrit, French & Spanish Language Lab Software Solution	Mobile Apps: The Language Lab Software should have Android & iOS supported Mobile App	Software access: The language-lab solution shall provide Android and/or iOS application access, a responsive web portal/web application, or an equivalent cross-platform interface supporting the required learner and administrator functions. It shall support current mainstream browsers/devices and include all licences for the contract period.
488	118	Item No 54: Device Management Software	*Platform should have provision to install application as well as details of installed application & Provision to uninstall application	Device-management software shall display installed-application inventory and shall support remote deployment/removal of applications where permitted by the device OS and enterprise-management APIs. Where direct silent installation/removal is restricted, an administrator-approved managed-app catalogue/workflow shall be provided.
489	118	Item No 54: Device Management Software	*Notification alert should be given if any IFPD Not functioning properly, if someone install/uninstall the application etc	The platform shall provide device online/offline and health/fault alerts. Application install/uninstall events shall be reported where supported by the device OS/management API; such event alerts shall not be mandatory where the OS prohibits them.
490	118	Item No 54: Device Management Software	Platform should show push notification to be displayed, when the system is On line	The dashboard shall show current online/offline status and last-seen time for each IFPD. Configurable administrator notifications may be provided; a dedicated push notification every time a device comes online shall not be mandatory.
491	118	Item No. 54: Device Management Software	*Platform should have provision to install application as well as details of installed application & Provision to uninstall application	Device-management software shall display installed-application inventory and shall support remote deployment/removal of applications where permitted by the device OS and enterprise-management APIs. Where direct silent installation/removal is restricted, an administrator-approved managed-app catalogue/workflow shall be provided.
492	118	Item No. 54 – Device Management Software	*Platform should have provision to install application as well as details of installed application & Provision to uninstall application	Device-management software shall display installed-application inventory and shall support remote deployment/removal of applications where permitted by the device OS and enterprise-management APIs. Where direct silent installation/removal is restricted, an administrator-approved managed-app catalogue/workflow shall be provided.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
493	118	Item No. 54 – Device Management Software	*Notification alert should be given if any IFPD Not functioning properly, if someone install/uninstall the application etc	The platform shall provide device online/offline and health/fault alerts. Application install/uninstall events shall be reported where supported by the device OS/management API; such event alerts shall not be mandatory where the OS prohibits them.
494	118	Item No. 54 – Device Management Software		The dashboard shall show current online/offline status and last-seen time for each IFPD. Configurable administrator notifications may be provided; a dedicated push notification every time a device comes online shall not be mandatory.
495	128	Item 69 – 65" Interactive Flat Panel Display – WA65F	OS: Android 15 or higher with Google EDLA	Operating system: Android 14 or later with valid Google EDLA certification for the offered model and OEM security/update support during the warranty period.
496	128	Item 69 – 65" Interactive Flat Panel Display – WA65F	HDMI - Minimum 3 inputs + 1 output	HDMI: Minimum 2 HDMI inputs and 1 HDMI output. The output function may alternatively be provided through an equivalent USB-C/HDMI digital video output with the required adapter supplied.
497	128	Item 69 – 65" Interactive Flat Panel Display – WA65F	USB - Minimum 5 including 2×USB 3.0	USB: Minimum 4 USB ports, including at least 2 × USB 3.0 or higher; the specified USB-C port shall be counted separately unless it also provides host USB functionality.
498	128	Item 69 – 65" Interactive Flat Panel Display – WA65F	Wi-Fi 6 or higher	Wireless: Dual-band Wi-Fi 5 (802.11ac) or higher. Wi-Fi 6/6E is preferred and shall be accepted as higher compliance.
499	128	Item 69 – 65" Interactive Flat Panel Display – WA65F	Certifications: REACH included	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.
500	128	Item 69 – 65" Interactive Flat Panel Display	Operating system: Android 15 or higher with Google EDLA	Operating system: Android 14 or later with valid Google EDLA certification for the offered model and OEM security/update support during the warranty period.
501	128	Item 69 – 65" Interactive Flat Panel Display	HDMI: Minimum 3 inputs + 1 output	HDMI: Minimum 2 HDMI inputs and 1 HDMI output. The output function may alternatively be provided through an equivalent USB-C/HDMI digital video output with the required adapter supplied.
502	128	Item 69 – 65" Interactive Flat Panel Display	USB: Minimum 5 including 2×USB 3.0	USB: Minimum 4 USB ports, including at least 2 × USB 3.0 or higher; the specified USB-C port shall be counted separately unless it also provides host USB functionality.
503	128	Item 69 – 65" Interactive Flat Panel Display	Wi-Fi 6 or higher	Wireless: Dual-band Wi-Fi 5 (802.11ac) or higher. Wi-Fi 6/6E is preferred and shall be accepted as higher compliance.
504	128	Item 69 – 65" Interactive Flat Panel Display	Certifications: REACH included	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.
505	128	Item No 69: 65-inch Interactive Flat Panel Display	Touch accuracy ±1mm or better	Touch accuracy: ±1.5 mm or better.
506	128	Item No 69: 65-inch Interactive Flat Panel Display	Operating system: Android 15 or higher with google EDLA certification	Operating system: Android 14 or later with valid Google EDLA certification for the offered model and OEM security/update support during the warranty period.
507	128	Item No 69: 65-inch Interactive Flat Panel Display	Power Consumption ≤450 W	Power consumption shall remain within the published ceiling for the respective screen size. Any lower OEM-rated value shall be treated as compliant/better.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
508	128	Item No 69: 65-inch Interactive Flat Panel Display	Certifications: Google EDLA Certified, BIS, IEC 62368-1, CE, FCC, RoHS, REACH, Energy Star 8.0 or latest, ISO 9001, ISO 14001, ISO 27001, ISO 45001, Front Panel IP5X or higher, Intel OPS Compliance	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.
509	128	Item No 69: 65-inch Interactive Flat Panel Display	34. Certifications: Google EDLA Certified, BIS, IEC 62368-1, CE, FCC, RoHS, REACH, Energy Star 8.0 or latest, ISO 9001, ISO 14001, ISO 27001, ISO 45001, Front Panel IP5X or higher, Intel OPS Compliance	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.
510	128	Item No 69: 65-inch Interactive Flat Panel Display	Certifications - Google EDLA Certified, BIS, IEC 62368-1, CE, FCC, RoHS, REACH, Energy Star 8.0 or latest, ISO9001, ISO14001, ISO27001, ISO45001, Front Panel IP5X or higher, Intel OPS Compliance	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.
511	128	Item No. 69: 86 inch IFPD	Certifications - Google EDLA Certified, BIS, IEC 62368-1, CE, FCC, RoHS, REACH, Energy Star 8.0 or latest, ISO9001, ISO14001, ISO27001, ISO45001, Front Panel IP5X or higher, Intel OPS Compliance	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
512	128	Item No 69: 65-inch Interactive Flat Panel Display	Certifications - Google EDLA Certified, BIS, IEC 62368-1, CE, FCC, RoHS, REACH, Energy Star 8.0 or latest, ISO9001, ISO14001, ISO27001, ISO45001, Front Panel IP5X or higher, Intel OPS Compliance	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.
513	129	Item 70 – 75" Interactive Flat Panel Display – WA75F	Operating system : Android 15 or higher with Google EDLA	Operating system: Android 14 or later with valid Google EDLA certification for the offered model and OEM security/update support during the warranty period.
514	129	Item 70 – 75" Interactive Flat Panel Display – WA75F	HDMI- Minimum 3 inputs + 1 output	HDMI: Minimum 2 HDMI inputs and 1 HDMI output. The output function may alternatively be provided through an equivalent USB-C/HDMI digital video output with the required adapter supplied.
515	129	Item 70 – 75" Interactive Flat Panel Display – WA75F	USB - Minimum 5 including 2×USB 3.0	USB: Minimum 4 USB ports, including at least 2 × USB 3.0 or higher; the specified USB-C port shall be counted separately unless it also provides host USB functionality.
516	129	Item 70 – 75" Interactive Flat Panel Display – WA75F	Wi-Fi 6 or higher	Wireless: Dual-band Wi-Fi 5 (802.11ac) or higher. Wi-Fi 6/6E is preferred and shall be accepted as higher compliance.
517	129	Item 70 – 75" Interactive Flat Panel Display – WA75F	Certifications - REACH included	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.
518	129	Item 70 – 75" Interactive Flat Panel Display	Operating system: Android 15 or higher with Google EDLA	Operating system: Android 14 or later with valid Google EDLA certification for the offered model and OEM security/update support during the warranty period.
519	129	Item 70 – 75" Interactive Flat Panel Display	HDMI - Minimum 3 inputs + 1 output	HDMI: Minimum 2 HDMI inputs and 1 HDMI output. The output function may alternatively be provided through an equivalent USB-C/HDMI digital video output with the required adapter supplied.
520	129	Item 70 – 75" Interactive Flat Panel Display	USB: Minimum 5 including 2×USB 3.0	USB: Minimum 4 USB ports, including at least 2 × USB 3.0 or higher; the specified USB-C port shall be counted separately unless it also provides host USB functionality.
521	129	Item 70 – 75" Interactive Flat Panel Display	Wi-Fi 6 or higher	Wireless: Dual-band Wi-Fi 5 (802.11ac) or higher. Wi-Fi 6/6E is preferred and shall be accepted as higher compliance.
522	129	Item 70 – 75" Interactive Flat Panel Display	certifications: REACH included	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
523	129	Item No 70: 75-inch Interactive Flat Panel Display	Touch Accuracy ±1 mm or better	Touch accuracy: ±1.5 mm or better.
524	129	Item No 70: 75-inch Interactive Flat Panel Display	Operating system: Android 15 or higher with google EDLA certification	Operating system: Android 14 or later with valid Google EDLA certification for the offered model and OEM security/update support during the warranty period.
525	129	Item No 70: 75-inch Interactive Flat Panel Display	Power Consumption ≤550 W	Power consumption shall remain within the published ceiling for the respective screen size. Any lower OEM-rated value shall be treated as compliant/better.
526	129	Item No 70: 75-inch Interactive Flat Panel Display	Certifications: Google EDLA Certified, BIS, IEC 62368-1, CE, FCC, RoHS, REACH, Energy Star 8.0 or latest, ISO 9001, ISO 14001, ISO 27001, ISO 45001, Front Panel IP5X or higher, Intel OPS Compliance	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.
527	129	Item No. 69 – 65-inch Interactive Flat Panel Display	Certifications - Google EDLA Certified, BIS, IEC 62368-1, CE, FCC, RoHS, REACH, Energy Star 8.0 or latest, ISO9001, ISO14001, ISO27001, ISO45001, Front Panel IP5X or higher, Intel OPS Compliance	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.
528	130	Item 71 – 86" Interactive Flat Panel Display – WA86F	OS: Android 15 or higher with Google EDLA	Operating system: Android 14 or later with valid Google EDLA certification for the offered model and OEM security/update support during the warranty period.
529	130	Item 71 – 86" Interactive Flat Panel Display – WA86F	HDMI - Minimum 3 inputs + 1 output	HDMI: Minimum 2 HDMI inputs and 1 HDMI output. The output function may alternatively be provided through an equivalent USB-C/HDMI digital video output with the required adapter supplied.
530	130	Item 71 – 86" Interactive Flat Panel Display – WA86F	USB - Minimum 5 including 2×USB 3.0	USB: Minimum 4 USB ports, including at least 2 × USB 3.0 or higher; the specified USB-C port shall be counted separately unless it also provides host USB functionality.
531	130	Item 71 – 86" Interactive Flat Panel Display – WA86F	Wi-Fi 6 or higher	Wireless: Dual-band Wi-Fi 5 (802.11ac) or higher. Wi-Fi 6/6E is preferred and shall be accepted as higher compliance.
532	130	Item 71 – 86" Interactive Flat Panel Display – WA86F	Certifications: REACH included	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.
533	130	Item 71 – 86" Interactive Flat Panel Display	Operating System: Android 15 or higher with Google EDLA	Operating system: Android 14 or later with valid Google EDLA certification for the offered model and OEM security/update support during the warranty period.
534	130	Item 71 – 86" Interactive Flat Panel Display	HDMI - Minimum 3 inputs + 1 output	HDMI: Minimum 2 HDMI inputs and 1 HDMI output. The output function may alternatively be provided through an equivalent USB-C/HDMI digital video output with the required adapter supplied.
535	130	Item 71 – 86" Interactive Flat Panel Display	USB - Minimum 5 including 2×USB 3.0	USB: Minimum 4 USB ports, including at least 2 × USB 3.0 or higher; the specified USB-C port shall be counted separately unless it also provides host USB functionality.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
536	130	Item 71 – 86" Interactive Flat Panel Display	Wi-Fi 6 or higher	Wireless: Dual-band Wi-Fi 5 (802.11ac) or higher. Wi-Fi 6/6E is preferred and shall be accepted as higher compliance.
537	130	Item 71 – 86" Interactive Flat Panel Display	Certifications: REACH included	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.
538	130	Item No 71: 86-inch Interactive Flat Panel Display	Touch Accuracy ±1 mm or better	Touch accuracy: ±1.5 mm or better.
539	130	Item No 71: 86-inch Interactive Flat Panel Display	Storage - Minimum 64 GB	Storage: Minimum 64 GB. An offered configuration with 128 GB or higher shall be compliant.
540	130	Item No 71: 86-inch Interactive Flat Panel Display	Bluetooth 5.2 or higher	Bluetooth: Version 5.2 or higher. An offered version 5.3 or later shall be compliant.
541	130	Item No 71: 86-inch Interactive Flat Panel Display	Power Consumption ≤650 W	Power consumption shall remain within the published ceiling for the respective screen size. Any lower OEM-rated value shall be treated as compliant/better.
542	130	Item No 70: 75-inch Interactive Flat Panel Display	34. Certifications: Google EDLA Certified, BIS, IEC 62368-1, CE, FCC, RoHS, REACH, Energy Star 8.0 or latest, ISO 9001, ISO 14001, ISO 27001, ISO 45001, Front Panel IP5X or higher, Intel OPS Compliance	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.
543	130	Item No 70: 75-inch Interactive Flat Panel Display	Certifications - Google EDLA Certified, BIS, IEC 62368-1, CE, FCC, RoHS, REACH, Energy Star 8.0 or latest, ISO9001, ISO14001, ISO27001, ISO45001, Front Panel IP5X or higher, Intel OPS Compliance	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
544	130	Item No 70: 75-inch Interactive Flat Panel Display	Certifications: Google EDLA Certified, BIS, IEC 62368-1, CE, FCC, RoHS, REACH, Energy Star 8.0 or latest, ISO 9001, ISO 14001, ISO 27001, ISO 45001, Front Panel IP5X or higher, Intel OPS Compliance	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.
545	130	Item No. 70 – 75-inch Interactive Flat Panel Display	Certifications: Google EDLA Certified, BIS, IEC 62368-1, CE, FCC, RoHS, REACH, Energy Star 8.0 or latest, ISO 9001, ISO 14001, ISO 27001, ISO 45001, Front Panel IP5X or higher, Intel OPS Compliance	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.
546	131	SECTION – 5 TECHNCIAL SPECIFICATIONS Item No 71: 86-inch Interactive Flat Panel Display	34. Certifications: Google EDLA Certified, BIS, IEC 62368-1, CE, FCC, RoHS, REACH, Energy Star 8.0 or latest, ISO 9001, ISO 14001, ISO 27001, ISO 45001, Front Panel IP5X or higher, Intel OPS Compliance	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.
547	131	Item No 71: 86-inch Interactive Flat Panel Display	Certifications - Google EDLA Certified, BIS, IEC 62368-1, CE, FCC, RoHS, REACH, Energy Star 8.0 or latest, ISO9001, ISO14001, ISO27001, ISO45001, Front Panel IP5X or higher, Intel OPS Compliance	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
548	131	Item No 71: 86-inch Interactive Flat Panel Display	34. Certifications: Google EDLA Certified, BIS, IEC 62368-1, CE, FCC, RoHS, REACH, Energy Star 8.0 or latest, ISO 9001, ISO 14001, ISO 27001, ISO 45001, Front Panel IP5X or higher, Intel OPS Compliance	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.
549	131	Item No. 71 – 86-inch Interactive Flat Panel Display	34. Certifications: Google EDLA Certified, BIS, IEC 62368-1, CE, FCC, RoHS, REACH, Energy Star 8.0 or latest, ISO 9001, ISO 14001, ISO 27001, ISO 45001, Front Panel IP5X or higher, Intel OPS Compliance	Certifications/Compliance: Valid Google EDLA certification for the offered model; BIS/CRS registration wherever legally applicable; IEC 62368-1 or the latest applicable equivalent; CE or FCC; RoHS; and valid ISO 9001, ISO 14001, ISO 27001 and ISO 45001 certification of the OEM/manufacturer shall be mandatory. Energy Star 8.0 or latest shall be submitted where applicable to the offered model; an OEM declaration with supporting test/compliance evidence shall be accepted where a separate certificate is not issued. Front-panel IP5X shall be supported by an OEM datasheet or a recognized-laboratory test report. Intel OPS compliance shall apply only where an OPS module/interface is offered and may be demonstrated through the OEM datasheet or compliance declaration.
550	132	Item No. 72: 10 – 20 Seaters (Option 1)	Certification: BIS/Indian-standard compliance wherever legally applicable under prevailing Indian regulations; RoHS compliance; and applicable safety/EMC test reports from a recognised laboratory. CE, FCC, CB or equivalent may be accepted as supporting evidence	Certification: BIS/Indian-standard compliance wherever legally applicable shall be mandatory. RoHS compliance/declaration and applicable safety/EMC test reports from a BIS-recognized, NABL-accredited or ILAC-signatory laboratory shall be accepted. CE, FCC, CB or equivalent may be submitted as optional supporting evidence and are not separately mandatory.
551	135	SECTION – 5 TECHNCIAL SPECIFICATIONS Item No. 72: 10 – 20 Seaters (Option 1)	48. Certifications: BIS/Indian-standard compliance wherever legally applicable; RoHS compliance; and applicable safety/EMC test reports from a recognised laboratory. CE, FCC, CB or equivalent may be accepted as supporting evidence	Certification: BIS/Indian-standard compliance wherever legally applicable shall be mandatory. RoHS compliance/declaration and applicable safety/EMC test reports from a BIS-recognized, NABL-accredited or ILAC-signatory laboratory shall be accepted. CE, FCC, CB or equivalent may be submitted as optional supporting evidence and are not separately mandatory.
552	135	Item No. 72: 10-20 seaters option 1	Certification: BIS/Indian-standard compliance wherever legally applicable under prevailing Indian regulations; RoHS compliance; and applicable safety/EMC test reports from a recognised laboratory. CE, FCC, CB or equivalent may be accepted as supporting evidence	Certification: BIS/Indian-standard compliance wherever legally applicable shall be mandatory. RoHS compliance/declaration and applicable safety/EMC test reports from a BIS-recognized, NABL-accredited or ILAC-signatory laboratory shall be accepted. CE, FCC, CB or equivalent may be submitted as optional supporting evidence and are not separately mandatory.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
553	135	Item No. 73: 10 – 20 Seaters (Option 2)	Certifications: BIS/Indian-standard compliance wherever legally applicable; RoHS compliance; and applicable safety/EMC test reports from a recognised laboratory. CE, FCC, CB or equivalent may be accepted as supporting evidence.	Certification: BIS/Indian-standard compliance wherever legally applicable shall be mandatory. RoHS compliance/declaration and applicable safety/EMC test reports from a BIS-recognized, NABL-accredited or ILAC-signatory laboratory shall be accepted. CE, FCC, CB or equivalent may be submitted as optional supporting evidence and are not separately mandatory.
554	135	Item No. 72 - 10-20 seaters option 1	Certification: BIS/Indian-standard compliance wherever legally applicable under prevailing Indian regulations; RoHS compliance; and applicable safety/EMC test reports from a recognised laboratory. CE, FCC, CB or equivalent may be accepted as supporting evidence	Certification: BIS/Indian-standard compliance wherever legally applicable shall be mandatory. RoHS compliance/declaration and applicable safety/EMC test reports from a BIS-recognized, NABL-accredited or ILAC-signatory laboratory shall be accepted. CE, FCC, CB or equivalent may be submitted as optional supporting evidence and are not separately mandatory.
555	137	SECTION – 5 TECHNCIAL SPECIFICATIONS Item No. 73: 10 – 20 Seaters (Option 2)	31. Certifications: BIS/Indian-standard compliance wherever legally applicable; RoHS compliance; and applicable safety/EMC test reports from a recognised laboratory. CE, FCC, CB or equivalent may be accepted as supporting evidence.	Certification: BIS/Indian-standard compliance wherever legally applicable shall be mandatory. RoHS compliance/declaration and applicable safety/EMC test reports from a BIS-recognized, NABL-accredited or ILAC-signatory laboratory shall be accepted. CE, FCC, CB or equivalent may be submitted as optional supporting evidence and are not separately mandatory.
556	137	Item No. 73: 10-20 seaters option 2	Certifications: BIS/Indian-standard compliance wherever legally applicable; RoHS compliance; and applicable safety/EMC test reports from a recognised laboratory. CE, FCC, CB or equivalent may be accepted as supporting evidence.	Certification: BIS/Indian-standard compliance wherever legally applicable shall be mandatory. RoHS compliance/declaration and applicable safety/EMC test reports from a BIS-recognized, NABL-accredited or ILAC-signatory laboratory shall be accepted. CE, FCC, CB or equivalent may be submitted as optional supporting evidence and are not separately mandatory.
557	137	Item No. 74: 20 – 30 Seaters (Option 1)	48. Certifications: BIS/Indian-standard compliance wherever legally applicable; RoHS compliance; and applicable safety/EMC test reports from a recognised laboratory. CE, FCC, CB or equivalent may be accepted as supporting evidence	Certification: BIS/Indian-standard compliance wherever legally applicable shall be mandatory. RoHS compliance/declaration and applicable safety/EMC test reports from a BIS-recognized, NABL-accredited or ILAC-signatory laboratory shall be accepted. CE, FCC, CB or equivalent may be submitted as optional supporting evidence and are not separately mandatory.
558	141	SECTION – 5 TECHNCIAL SPECIFICATIONS Item No. 74: 20 – 30 Seaters (Option 1)	48. Certifications: BIS/Indian-standard compliance wherever legally applicable; RoHS compliance; and applicable safety/EMC test reports from a recognised laboratory. CE, FCC, CB or equivalent may be accepted as supporting evidence	Certification: BIS/Indian-standard compliance wherever legally applicable shall be mandatory. RoHS compliance/declaration and applicable safety/EMC test reports from a BIS-recognized, NABL-accredited or ILAC-signatory laboratory shall be accepted. CE, FCC, CB or equivalent may be submitted as optional supporting evidence and are not separately mandatory.
559	141	Item No. 74: 20-30 seaters option 1	48. Certifications: BIS/Indian-standard compliance wherever legally applicable; RoHS compliance; and applicable safety/EMC test reports from a recognised laboratory. CE, FCC, CB or equivalent may be accepted as supporting evidence	Certification: BIS/Indian-standard compliance wherever legally applicable shall be mandatory. RoHS compliance/declaration and applicable safety/EMC test reports from a BIS-recognized, NABL-accredited or ILAC-signatory laboratory shall be accepted. CE, FCC, CB or equivalent may be submitted as optional supporting evidence and are not separately mandatory.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
560	146	Item No. 76: 30 – 40 Seaters	52. Certifications: BIS/Indian-standard compliance wherever legally applicable; RoHS compliance; and applicable safety/EMC test reports from a recognised laboratory. CE, FCC, CB or equivalent may be accepted as supporting evidence where relevant	Certification: BIS/Indian-standard compliance wherever legally applicable shall be mandatory. RoHS compliance/declaration and applicable safety/EMC test reports from a BIS-recognized, NABL-accredited or ILAC-signatory laboratory shall be accepted. CE, FCC, CB or equivalent may be submitted as optional supporting evidence and are not separately mandatory.
561	149	SECTION – 5 TECHNCIAL SPECIFICATIONS Item No. 76: 30 – 40 Seaters	52. Certifications: BIS/Indian-standard compliance wherever legally applicable; RoHS compliance; and applicable safety/EMC test reports from a recognised laboratory. CE, FCC, CB or equivalent may be accepted as supporting evidence where relevant	Certification: BIS/Indian-standard compliance wherever legally applicable shall be mandatory. RoHS compliance/declaration and applicable safety/EMC test reports from a BIS-recognized, NABL-accredited or ILAC-signatory laboratory shall be accepted. CE, FCC, CB or equivalent may be submitted as optional supporting evidence and are not separately mandatory.
562	149	Item No. 76: 30-40 seaters	52. Certifications: BIS/Indian-standard compliance wherever legally applicable; RoHS compliance; and applicable safety/EMC test reports from a recognised laboratory. CE, FCC, CB or equivalent may be accepted as supporting evidence where relevant	Certification: BIS/Indian-standard compliance wherever legally applicable shall be mandatory. RoHS compliance/declaration and applicable safety/EMC test reports from a BIS-recognized, NABL-accredited or ILAC-signatory laboratory shall be accepted. CE, FCC, CB or equivalent may be submitted as optional supporting evidence and are not separately mandatory.
563		Interactive Flat Panel – WA65F/WA75F/WA86F (earlier specification)	Storage (ROM) - 128 GB or higher	Internal storage: 64 GB or higher.
564		Interactive Flat Panel – WA65F/WA75F/WA86F (earlier specification)	Operating System - Android 16.0 or better	Operating system: Android 14 or later with valid Google EDLA certification for the offered model and OEM security/update support during the warranty period.
565		Interactive Flat Panel – WA65F/WA75F/WA86F (earlier specification)	Touch Glass - 4 mm tempered glass or better	Protection glass: Minimum 3.2 mm tempered/toughened anti-glare glass, 7H hardness or better; an equivalent construction meeting the same protection and touch-performance requirements shall be acceptable.
566		Interactive Flat Panel – WA65F/WA75F/WA86F (earlier specification)	Connectivity: 3× USB 3.0 Type-A; Mic-in; Earphone	Connectivity: At least 2 × USB Type-A ports, including at least 1 × USB 3.0 or higher, and 1 × USB Type-C. Microphone/earphone functions may be provided through dedicated 3.5 mm ports or equivalent USB/USB-C/HDMI digital audio interfaces; any required adapters shall be included.
567		Interactive Flat Panel – WA65F/WA75F/WA86F (earlier specification)	Speakers: 20 W × 2 or better	Built-in audio: Minimum 15 W × 2 speakers. A higher-output built-in or supplied external audio system shall be acceptable.
568		Interactive Flat Panel – WA65F/WA75F/WA86F (earlier specification)	Maximum Power Consumption - 350 W or better	Maximum OEM-rated power consumption: 450 W or lower for 65-inch, 550 W or lower for 75-inch and 650 W or lower for 86-inch IFPD. Lower consumption shall be treated as better compliance.
569		Interactive Flat Panel – WA65FX-P/WA75FX-P/WA86FX-P	Operating System - Android 14.0 or better	Accepted. Operating system: Android 14 or later with valid Google EDLA certification for the offered model.
570		Interactive Flat Panel – WA65FX-P/WA75FX-P/WA86FX-P	Touch Glass - 4 mm tempered glass or better	Protection glass: Minimum 3.2 mm tempered/toughened anti-glare glass, 7H hardness or better; an equivalent construction meeting the same protection and touch-performance requirements shall be acceptable.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
571		Interactive Flat Panel – WA65FX-P/WA75FX-P/WA86FX-P	Connectivity - 3× USB 3.0 Type-A; Mic-in; Earphone	Connectivity: At least 2 × USB Type-A ports, including at least 1 × USB 3.0 or higher, and 1 × USB Type-C. Microphone/earphone functions may be provided through dedicated 3.5 mm ports or equivalent USB/USB-C/HDMI digital audio interfaces; any required adapters shall be included.
572		Interactive Flat Panel – WA65FX-P/WA75FX-P/WA86FX-P	Magnetic Pen holder - Required	Stylus storage: Magnetic pen holder, integrated pen tray/slot, clip or equivalent secure holder shall be acceptable. Required styluses shall be supplied.
573		Interactive Flat Panel – WA65F/WA75C/WA86F (450/500-nit specification)	Brightness - 450/500 nits or higher	Brightness: 400 nits or higher (typical).
574		Interactive Flat Panel – WA65F/WA75C/WA86F (450/500-nit specification)	Speakers - 20 W × 2 or better	Built-in audio: Minimum 15 W × 2 speakers. A higher-output built-in or supplied external audio system shall be acceptable.
575		Interactive Flat Panel – WA65F/WA75C/WA86F (450/500-nit specification)	Wi-Fi 6 / Wi-Fi 6E or better	Wireless: Dual-band Wi-Fi 5 (802.11ac) or higher. Wi-Fi 6/6E is preferred and shall be accepted as higher compliance.
576		Interactive Flat Panel	Storage (ROM) - 128 GB or higher	Internal storage: 64 GB or higher.
577		Interactive Flat Panel	Operating system - Android 16.0 or better	Operating system: Android 14 or later with valid Google EDLA certification for the offered model and OEM security/update support during the warranty period.
578		Interactive Flat Panel	Touch glass - 4 mm tempered glass or better	Protection glass: Minimum 3.2 mm tempered/toughened anti-glare glass, 7H hardness or better; an equivalent construction meeting the same protection and touch-performance requirements shall be acceptable.
579		Interactive Flat Panel	Connectivity: 3× USB 3.0 Type-A; Mic-in; Earphone	Connectivity: At least 2 × USB Type-A ports, including at least 1 × USB 3.0 or higher, and 1 × USB Type-C. Microphone/earphone functions may be provided through dedicated 3.5 mm ports or equivalent USB/USB-C/HDMI digital audio interfaces; any required adapters shall be included.
580		Interactive Flat Panel	Speakers - 20 W × 2 or better	Built-in audio: Minimum 15 W × 2 speakers. A higher-output built-in or supplied external audio system shall be acceptable.
581		Interactive Flat Panel	Max Power Consumption - 350 W or better	Maximum OEM-rated power consumption: 450 W or lower for 65-inch, 550 W or lower for 75-inch and 650 W or lower for 86-inch IFPD. Lower consumption shall be treated as better compliance.
582		Interactive Flat Panel	Operating system - Android 14.0 or better	Accepted. Operating system: Android 14 or later with valid Google EDLA certification for the offered model.

Annexure-B

S.No	Page No. of RFP	Section of the RFP	Point of clarification required as per RFP	Clarification/ Revised Clause may be read as
591				Added in final updated specifications
592		Device Management Software	Additional Feature	As per RFP