



21st November 2024

CORRIGENDUM

Please refer to GEM Bid No. GEM/2024/B/5555338 dated 28.10.2024 for Supply and Installation of Smart Classroom with Interactive Panel, Smart Podium and PTZ Cameras etc at Seminar Hall-1 of Faculty Centre of ICAR-NAARM.

In this regard, it is informed that there is an amendment in response to queries. The response of ICAR-NAARM given at **Annexure-I**. all other terms & condition of the tender will remain same.

Accordingly, all the prospective bidders are requested submit their bids in conformity with the Tender terms & conditions by 29th November 2024.

AAO

Annexure I

ICAR-National Academy of Agricultural Research Management
Rajendranagar, Hyderabad 500 030

Amended Specifications (Underlined)

S.N.	Product Details	Qty.
1	<p>Interactive Flat Panel: Supply, Installation, Testing and Commissioning of Interactive Flat Panel Display: Diagonal Size:85”- 87” or higher; Backlight Type: Direct LED; Aspect Ratio: 16:09; Response: 5ms to 8ms or better; Resolution: 3840 x 2160 or better, Contrast Ratio 1000:1/4000:1 or better; Brightness(cd/m2): 400cd/m2 or better and should be controllable/ based on customer requirement.</p> <p>Viewing angle: 178 ° or better Lifetime: 50,000 hours or more System: OS: Android 13.0 or more with play store RAM: 8GB; FLASH (Memory): 128GB (64 Gb internal & 64 external also), CPU: ARMCortexA55*4/ARMMali-G52MP2 or better; inbuilt OPS of i5, 8GB RAM and 512 GB SSD Storage or better, Windows 10 or higher with suitable input and output ports; <i>I/O Port:</i> Rear Port: HDMI IN*2, TOUCH*1, USB3.0*1 or more, MIC IN*1, Line OUT*1, RS232*1, “AV IN*1, AV OUT*1, COA XOUT*1, TF*1” are optional, LAN in/out port, HDMI OUT*1 or more/better Front Input: USB3.0, HDMI IN, TOUCH, Type-C (Optional) <i>Media Format:</i> <i>Audio:</i> Mp3, WMA, WAV, AAC, M4A or better <i>Video:</i> H.264, VP 8, RV, WMV, AVS, H.263, MPEG4 or better <i>Picture:</i> JPG, BMP, PNG; Colors 1.07B(10bit) or better Out- <i>Touch Features:</i> Touch Type: Infrared or Capacitive Touch, 20points Touch; <i>Glass:</i> 3mm or more, tempered glass/ shutter proof glass, Hardened surface with Anti Scratch & anti-Glare Surface or better Response Time: ≤5~8ms or better; Touch Precision: ≤1mm or better; Touch Object: All Opaque object, such as finger, pen etc; No. of touch pens (with suitable magnet space on the Display front): Qty 2 or more and it may be dual function Pen - One Side Eraser & Other Side Pen or better <i>Interface:</i> USB; Audio: Speaker: 2 x 15W or more Working Voltage AC 100-240V, 50/60Hz <i>Tech Features:</i> Video Format: 1080p, 4K or more; <i>Function Features:</i> Multiple Control: Support remote control, keyboard, Touch control; Touch: 20 points touch or better; Multiple I/O: Support HDMI / Display Port / TV etc.; Input Auto Scan: Auto scan the input signal, and countdown tips; <i>Networking:</i> LAN &Wi-Fi</p>	01 No.

S.N.	Product Details	Qty.
	<p><i>Airplay:</i> iPhone, iPad wireless display on monitor by airplay Inbuilt Quad View functionality to connect minimum 4 Mobile/ Tablet together or better Should support 4X split screen technology or better. Software: White board, Mirror display, Comment, File Manager, YouTube, Settings, Calculator, User Manual, Float tool, Side tool bar, Note, Vote, Screen recording, Bluetooth etc. Provision to be made for the displaying of the content from PC in podium also.</p> <p>Including suitable wall mounted stand for wall.</p>	
2	<p>Display Unit: Display with –110” or higher, 4K UHD Resolution, Brightness 450 nits or higher 20wX 2 Speakers, HDMI Connectivity, RS232C, RJ45(1) LAN & USB x2 Port or better, Audio in/out. Contract Ratio: 1,000: 1 or more, Viewing angle: 178 ° or better The unit should have the facility to show the display content in IFP or can also have the facility to use individually using I/O ports or with screen mirror technology etc. i.e. The above 3 display units (1 IFP + 2 Displays) can be used to display the same content along with PC in the podium and also may be operated individually as per the customer requirement. <i>Glass: with hard glass is to be provided</i> “3mm or more, tempered glass/ shutter proof glass, Hardened surface with Anti Scratch & anti-Glare Surface” are optional Working Voltage AC 100-240V, 50/60Hz</p> <p>With suitable wall mounted stand for wall/wooden panel</p>	02 No.
3	<p>Digital Podium with Audio System: Supply, Installation, Testing and Commissioning of Customized Metallic house structure, powder coated with caster wheels & brakes. Drawer for keyboard, mouse and document camera. Top Tray for placing document & Laptop. All drawers sliding tray and doors should be Lockable. Podium should have wheels with locking facility. <i>External Connectivity:</i> Having 2 X USB, one MIC XLR, 2 x HDMI IN, Power Socket with ON/OFF. <i>Internal Connectivity:</i> HDMI 4 x 2 HDMI Matrix Switcher (4K resolution) with HDMI 2.0, HDCP 2.2 & 1.4, Support 18 Gbps uncompressed band width on all HDMI, Video resolution up to 4K2K@60hz YCbCr 4:4:4. HDMI Splitter 1 in 8 Out (4K resolution support)</p> <p>Document camera tray, Minimum 8 Universal rating 5 Amp Socket with miniature circuit breaker. Provision to fix Logo at the front side with flexibility to change the logo. Provision of 19" Rack inside podium to fit in international standard equipment. Access doors for servicing both from front and back side of the podium.</p> <p><i>Interactive panel:</i> FULL HD 20-22” LED touch Monitor with Resolution 1920 x 1080 or better. Brightness 250 cd/m². Contrast Ratio 1000:1, Viewing Angle 160° or better, Technology Electromagnetic, Capacitive or better, Touch Points 10 Points or better.</p> <p>1 x PC, i7 processor, 16GB RAM and 512 GB SSD, Windows 10 or higher.</p> <p>Audio: 2 x Gooseneck Microphone (Phantom powered), {one will be in spare};</p>	01 set

S.N.	Product Details	Qty.
	<p>2 x Wireless Collar and 4 x Handheld UHF Microphone (with back light display for Frequency & battery level Identification) with 50 ft or more distance coverage, 2x1.5 V battery in each to operate; High quality UHF band frequency dual Wireless Microphone System. Durable, reliable, and rugged build quality, cardioid polar pattern Range: 50 feet or more 200 Selectable UHF Channels (optional). Back light display for Frequency & battery level Identification. Individual channel output with level control & mix output.</p> <p><i>Amplifier:</i> “Supply, of 300W or better using single or multiple units with multiple channels and suitable connections” Gain Control: The system should have the facility to control the gain of microphone; Indicator: The system should have LED indicator for status; Frequency Response: The Frequency response should be 20Hz – 20000 Hz; Amplifier Type: The system should be Class-D type digital amplifier with Bass, treble Equalizer; one or more Unbalanced Microphone 6.5mm Phono Input with gain controller; RS232 port: Amplifier should have 1 X RS232 port for controlling (this is optional). It should have S/N Ratio: >90 dB. It should have THD: Less than 0.1% at 1kHz. it should have Load protection: on/off mute, DC fault grounding relay, internal fault fuses feature or more.</p> <p><i>6 x Wall Mount Speakers:</i> 40-watt or better Wall Mount 2-way passive loudspeaker.; Elements: 5¼" woofer + 0.5" TWT or better; with impedance of 8 ohms or higher; Sensitivity (1W/1m): 90 dB or better; Max SPL: 90 dB or better; Frequency response: 90 Hz - 20 kHz or better.; Type of Mounting: It should be wall-mounting or higher; Dual axis Mounting: It can be mounted vertically or horizontally in both axes</p> <p><i>1 x Digital Signal Processor (with echo and noise cancellation):</i> with min. 08 Mic/Line inputs, 06 Line outputs or better , Input channel processing should include Pre amplifier, Signal generator, Expander, Compressor, 10 band Parametric EQ or better, Output Channel processing should include Graphic equalizer, Delay, Crossover, limiter or better, Other features should include Automatic mixing console, Feedback elimination, Noise elimination, echo elimination or better, Should have built-in Bi directional USB or 2 uni directional units for Software based VC as well as for playing digital audio, Sampling rate of 48Khz or better, Frequency response of 20Hz – 20Khz or better, per channel phantom power module or better. Should be configurable through software and should have sufficient I/O audio ports. Line input interfaces, usually for the local audio source, i.e., laptop, etc. Line output interfaces, usually for the external recording device DSP Should have dual capability of Local Sound Reinforcement and far end Audio to be sent for Video conferencing at the same time without any Noise and Echo. Whatever teacher or student speaks through Collar or hand held microphone and Gooseneck microphone all should be Going to far end Location over Video Conference and also should come out of Speakers for local Sound Reinforcement so that everyone present in class can also hear clearly.</p> <p><i>1X Remote Audio Control Switch/Device:</i> Fully customizable front touch panel /knob to adjust various parameters of DSP. Control Cable - RJ-45 (Cat-6/7 Network Cable) with suitable protocols. Suitable power cabling may be done from the podium to the remote device.</p>	

S.N.	Product Details	Qty.
	<p>Control Line Length-≤100 Meter Screen Size-small It should be mounted to the wall /panelling in an enclosure/rack at the backside of the participants/trainees.</p>	
4	<p>PTZ Tracking camera: (for the faculty, podium and Dias) Supply, Installation, Testing and Commissioning of Tracking Camera: Optical Zoom: 20X or more; Digital Zoom: 12X or more; 2 Mega Pixel; CMOS Sensor; Preset: Maximum 255 preset positions can be set(10 via remote controls), Real-Time Tracking: Maximum Tracking Range of 6 meters Input/output Ports: HDMI, LAN(POE), USB3.0, SDI, Audio IN, RS422 (Compatible with RS485), DC12V Power, HDMI: 1080P60, 1080P50, 1080P30, 1080P25, 720P60, 720P50, 1080P59.94, 1080P29.97, 720P59.94 or better; Minimum illumination: 0.5Lux (F1.8, AGC ON); Auto White Balance: automatic and manual both, Focus modes: Automatic, manual, one-key focus; Exposure mode: Auto, manual, shutter priority, aperture priority, brightness priority; Iris value: F1.8 -- F11 (Optional); Shutter Speed: 1/25 -- 1/1000 or better; BLC: On/Off; Baud rate : 115200,9600,4800,2400 or better; SNR:≥50dB or better; Image adjustment: Brightness, saturation, contrast, sharpness, black and white mode, gamma curve; Video Encoding Format: H.265 , H.264 or better. Audio Interface: Input- Dual channel 3.5mm linear input; Output: HDMI, SDI, LAN, USB3.0; Support remote upgrade, remote restart and remote reset; Pan rotation: -150° -- +150° or wider; Tilt rotation: -25°-- +75° or wider; Pan speed range: 0.1°/s -- 75°/s or more; Tilt speed range: 0.1°/s -- 30°/s or more;</p> <p>Including suitable wall mounted/ceiling mounted stands</p>	01 No.
5	<p>PTZ Camera: (for trainees) Supply, Installation, Testing and Commissioning of PTZ Camera: Optical Zoom: 12X or more; f=3.9~46.1mm, (Optional); View Angle: 6.3°(tele) (Optional)--72.5°(wide) or better; Sensor: 1/2.8 inch high-quality HD CMOS sensor; Effective Pixels: 16:9, 2.07 megapixel; Video Format: 1080p 60fps/1080i 60fps; Digital Zoom: 10X or more; White Balance: Auto/Manual; Focus: Auto/Manual; Aperture: Auto/Manual; Minimum Illumination: 0.5Lux or better; Electronic Shutter: Auto/Manual; BLC: ON/OFF; Video Adjustment: Brightness, Color, Saturation, Contrast, Sharpness, B/W mode, Gamma curve; Video Interfaces: USB3.0,USB2.0, HDMI, LAN, RS232(IN),Audio-in; Image Code Stream: Dual stream output; Video Compression Format: H.264/ H.265 or better; Control Signal Interface: RS-232; Audio Input Interface: Double track 3.5mm linear input; Support protocol control through IP port; Pan Rotation: ±170° or better; Tilt Rotation: -30°~+90° or better; Pan Control Speed: 0.1 -100°/sec or better; Tilt Control Speed: 0.1-45°/sec or better; Preset Speed: Pan: 100°/sec or better, Tilt: 45°/sec or better; Preset Number: 255 presets(10 presets by remote controller) or better; Accessory: Power supply, RS232 control cable, Remote, Manual.</p> <p>Including suitable wall mounted/ceiling mounted stands</p>	01 No.
6	<p>Camera Switcher and USB Capture Card (for recording): Supply, Installation, Testing and Commissioning of Camera switcher : It should be dual channel video switcher mixer for the streaming generation, mini-pro features four resolution independent inputs – three up to 2K and one up to full 4K@60 to take advantage of native high-performance sources, whether cameras or laptops, without compromising on quality;</p>	01 Unit

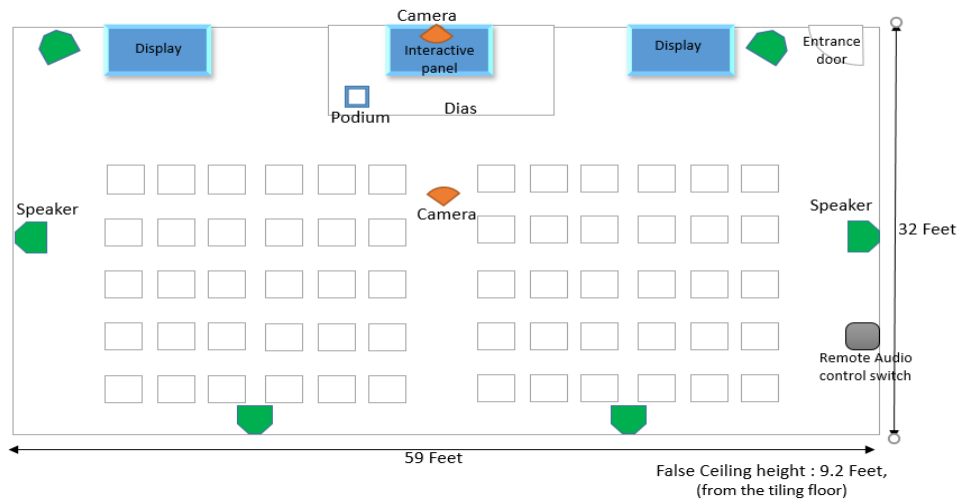
S.N.	Product Details	Qty.
	<p>It should have presets for PIP and PBP , it should also include full pixel-to-pixel scaling capabilities for both the PIP and background video layers ; It should have Audio for output should be selectable from embed ,It should have built-in LCD display just not to only shows video preview, but it should be touch enabled for day to day operation of features and settings. ; It should have features including dynamic output control, preview multi-view, picture in picture, Chroma Key, video transitions, on board PTZ camera controls etc.;</p> <p><i>Stream:</i> It should have super speed USB3.0 streaming in which just by connecting the device to a laptop or other device it should stream quickly and easily to various social media and streaming platforms as well as a vast array of popular collaboration applications.;</p> <p><i>Go Live:</i> It should be able to display local and live with the 2K HDMI output port – which should be used for a preview or the live program output. It should be more than a streaming switcher and should also be a live event switcher;</p> <p><i>Record:</i> It should be able to from dedicated USB port to capture, record video and audio directly from the device with any portable HDD up to 2TB.;</p> <p><i>Control:</i> It should have on board control for PTZ cameras directly within the device. It should save attribute views of cameras for recall at the touch of a button.;</p> <p><i>Preview:</i> It should be able showcase all sources live immediately in the built-in LCD display. It should have the facility to get connected to a video output and should display a multi-view preview to always see the next preset before going live.;</p> <p><i>Mix:</i> It should have transition and switch between live video program and preset. It should be able to recall saved preset views along with scaled video layers.</p> <p>It should able to make single video frame from multiple camera sources to facilitate the online meeting platforms like zoom, WebEx, meet etc.</p>	
7	<p>Suitable cables (incl. power cables & HDMI, Type C) and connectors, patch cards to be provided and PVC Casing & Capping to be arranged for the covering of cables from rat bites/ rodent proof cables may be arranged.</p> <p><u>Establishment of smart classroom work may be done on turnkey basis</u></p> <p>If the established equipment is not accommodating, with in the podium, then a 17U floor mount metal rack may be arranged about 5-10 ft. distance from the podium with suitable patch cards and suitable cables etc. with casing/protection</p> <p>Installation, Training and 3-year onsite warranty to be provided by the bidder on all equipment. The provided technology in all the quoted equipment may be support for at least next five (5) years and spare parts also should be available in the market/with authorized dealer of concerned OEMs.</p> <p>Customer care support should also be there for the OEM/equipment after the warranty period also.</p>	

- a. **Bidders shall quote only those products (Part of Service delivery) which are not already obsolete in the market.**
- b. **OEM should submit valid BIS registration and submit alongwith Technical Bid.**
- c. **In tender document under T&C, point no.4. f., Proof of at least one contract related to supply and installation of Interactive Flat Panel (IFP) by authorized Bidder/OEM of value Rs.15 Lakhs per year or above during the last 3 financial years along with duly filled Annexure-C.**

- d. OEM should have 15 Lakhs per year turnover in past 3 financial years.
- e. ePBG may be read as 5% at all places
- f. Delivery period including installation may be read as – not exceeding 45 days

Schematic Diagram of the proposed site is now included

Approx. Dimensions of seminar hall, faculty centre-NAARM



**** Tentative Layout plan**