



Annex -1



## TENDER CONDITION FOR CONTRACTORS

|                               |                                                         |
|-------------------------------|---------------------------------------------------------|
| <b>Project Title:</b>         | Supply of Electrical & Mechanical Consumables           |
| <b>Project Funded by:</b>     | Technology Development Fund (TDF) - HEC                 |
| <b>Procurement by:</b>        | NCRA, E&ME College, NUST                                |
| <b>Procurement Ref.:</b>      | NUST/EME/NCRA-2026-249                                  |
| <b>Tender Fee:</b>            | PKR 3000/- (Non-refundable)                             |
| <b>Bid Security:</b>          | 3% of Bid Value                                         |
| <b>Performance Guarantee:</b> | 5% (After Award of Contract) till completion of Project |

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**Request for Proposal**  
**National Centre of Robotics & Automation (NCRA)**  
**College of EME, NUST**

**Reference No:** NUST/EME/NCRA-2026-249

**Supply of Electrical & Mechanical Consumables**

**Date:** .....

1. This Invitation for submission of proposals follows the Procurement Notice for this project which is uploaded on EPADS, and the official websites of NUST.
2. The NCRA now invites proposals to provide the following Supply of Goods:

**Supply of Electrical & Mechanical Consumables**

More details on the supplies are provided in the INSTRUCTION TO BIDDERS (ITB).

3. Submission of Pay Order/Bank Draft of **Rs. 3,000/-** (non-refundable) in favour of ‘**National Center of Robotics and Automation-NUST**’, Tender Process Fee before technical bid opening.
4. This Request for Proposal (RFP) is open for all registered / authorized firms having a registered business. The firm must have a valid NTN and sales tax registration.
5. It is not permissible to transfer this RFP to any other firm.
6. Please upload scanned version of your proposal through EPADS and also submit Original Bid Security and tender fee instrument on the following address:

**Contact Information**

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**INSTRUCTION TO BIDDERS (ITB):****General****1. Information about Project /scope of work**

**The College of Electrical & Mechanical Engineering (E&ME), NUST** is the prime hub of engineering education in Pakistan, offering the best under-graduate and graduate programmes in the country.

**The National Centre of Robotics and Automation (NCRA)** is a consortium of 14 labs over 13 universities of Pakistan with its centre headquarter at NUST College of E&ME. The centre will serve as a leading technological hub within the domain of Robotics and Automation. NCRA vision is to manage and efficiently use the highly skilled researchers, scientists and experts of robotics and automation in order to generate resources based on our innate strengths towards transforming Pakistan into one of the technologically advanced nations of the world.

**1.1 Objectives:**

The subject of the contract is the Supply of Electrical & Mechanical Consumables at NCRA, E&ME college, NUST by the tenderer as per the following details

| <b>Lot # 1: Mechanical Consumables</b> |                                 |                                              |             |                 |
|----------------------------------------|---------------------------------|----------------------------------------------|-------------|-----------------|
| <b>Sr #</b>                            | <b>Item</b>                     | <b>Description</b>                           | <b>Unit</b> | <b>Quantity</b> |
| 1                                      | Bolt 1                          | M3*12mm                                      | No.         | 200             |
| 2                                      | Bolt 2                          | M3*15mm                                      | No.         | 200             |
| 3                                      | Bolt 3                          | M3*25mm                                      | No.         | 150             |
| 4                                      | Bolt 4                          | M3*40mm                                      | No.         | 150             |
| 5                                      | Bolt 5                          | M2.5*12mm                                    | No.         | 150             |
| 6                                      | Bolt 6                          | M4*10mm                                      | No.         | 200             |
| 7                                      | Nut                             | M3                                           | No.         | 200             |
| 8                                      | Nut (Nylock)                    | M3                                           | No.         | 200             |
| 9                                      | Spacers                         | M3x40mm                                      | No.         | 30              |
| 10                                     | Washers                         | M3                                           | No.         | 200             |
| 11                                     | M3 Aluminium Rod End Ball Joint | M3 , threaded                                | No.         | 40              |
| 12                                     | RC Bar Linkage                  | Linkage Rod M3<br>Double Thread Link<br>45mm | No.         | 40              |

|    |                                                     |                                                                                                                                                                                                                                                                                                  |         |     |
|----|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----|
| 13 | RC Bar Linkage                                      | Linkage Rod M3<br>Double Thread Link 100mm                                                                                                                                                                                                                                                       | No.     | 10  |
| 14 | Servo Arm                                           | 25T , Lenght: 35.5mm                                                                                                                                                                                                                                                                             | No.     | 20  |
| 15 | Small Disc 25T Standard Steering Gear               | Mounting hole spacing: 14mm<br>Diameter: 20mm<br>Spend toothed aperture 5.5mm<br>Flower tooth number of 25mm<br>4 x M3 tapped mounting holes                                                                                                                                                     | No.     | 40  |
| 16 | M3 Brass Inserts                                    | (Height x External Dia):<br>M3(4x4.5 mm)<br>Material: Brass<br>Fastener Type: Insert<br>Exterior Finish: Brass                                                                                                                                                                                   | No.     | 150 |
| 17 | M4 Brass Inserts                                    | (Height x External Dia):<br>M4(8x6mm)<br>Material: Brass<br>Fastener Type: Insert<br>Exterior Finish: Brass                                                                                                                                                                                      | No.     | 150 |
| 18 | Aluminium Sheets T6061                              | Thickness: 2mm<br>Size: 2ft x 4ft                                                                                                                                                                                                                                                                | No.     | 4   |
| 19 | Aluminium Sheets T6061                              | Thickness: 1.5mm<br>Size: 1.5ft x 1.5ft                                                                                                                                                                                                                                                          | No.     | 4   |
| 20 | Mecanum Wheels                                      | <b>2 Right Wheels and 2 left Wheels</b><br>Size: 52mm<br>Outer diameter: 51.8mm<br>Thickness: 24.9mm<br>Hexagonal hole: 6mm                                                                                                                                                                      | No.     | 4   |
| 21 | Mecanum Wheels                                      | <b>4 Right wheels and 4 left Wheels</b><br>Wheel Diameter: 60mm<br>Wheel Thickness: 30.62mm<br>Number of Rollers: 9<br>Angle: 45°<br>Load Capacity: 15kg<br>Color: black<br>Material: plastic + silicone rubber<br>Motor Shaft Coupling Diameter: 6.71mm<br>Motor Shaft Coupling Length: 27.28mm | No.     | 8   |
| 22 | Manufacturing : Laser Cutting & sheet metal bending | Manufacturing as per design requirements,<br>Can Visit NCRA to view design,<br>Design Files will be shared with winning bider                                                                                                                                                                    | Lum Sum | 1   |

|    |                            |                                                                                                                                |         |   |
|----|----------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------|---|
| 23 | Manufacturing: 3D Printing | Manufacturing as per design requirements,<br>Can Visit NCRA to view design,<br>Design Files will be shared with winning bidder | Lum Sum | 1 |
|----|----------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------|---|

### Lot # 2, Electrical Consumables

| Sr # | Item                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Unit | Quantity |
|------|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| 1    | Servo Motor SPT 5435LV-180W or equivalent | Motor: Core    Potentiometer: Mechanics<br>Neutral point: 1500us    Voltage Range: 4.8V/6.0V<br>PWM Voltage 3.3V/5V    Signal Frequency: 330Hz<br>Feedback Angle: No    Operating temperature: -10C -50C<br>Cycle: 20ms    Dead Band: 4us<br>Default Direction: CCW    Yes/no lock: Lock<br>Remote Control Angle: 90 Degree  500-2500us Angle: 180/ PWM<br>Quiescent Current: 100mAh    <br>Rated current: 1.4A<br>Blocking Current: 3.5A     Weight / Dimensions: 60g / 40.5*20*40.5mm<br>Output Gear: Futaba 25T    Gear Material: All metal gear<br>Shell Material: Half Aluminum Shell    Bearing: 2BB<br>Connector Wire Length: 260mm     line definition: Brown- /Red+/Orange s<br>Operating Speed: 4.8V/0.16"/60 deg, 6.0V/0.14"/60 deg<br>Stall Torque: 4.8V/29 kg.cm, 6.0V/35kg.cm | No.  | 24       |
| 2    | TT Metal Gear DC Motor 6V                 | TT motor robot metal gear motor operating voltage: 3V-6V DC, Output: 110 RPM<br>Deceleration ratio 1: 90, single shaft<br>All metal gear, blue plastic motor case<br>The microcontroller without interference, anti-interference ability.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | No.  | 12       |

|   |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |     |    |
|---|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| 3 | ESP32 Wemos Lolin               | <p>Microcontroller: ESP-WROOM-32<br/>         Operating Voltage: 3.3V<br/>         Input Voltage: 5V via USB or 3.7V LiPo battery<br/>         WiFi: 802.11 b/g/n<br/>         Bluetooth: v4.2 BR/EDR and BLE<br/>         Weight: 9 grams</p>                                                                                                                                                                                                                                      | No. | 5  |
| 4 | TB6612FNG DC Motor Driver       | <p>Power supply voltage: VM=15V max, VCC=2.7-5.5V<br/>         Output current:<br/>         Iout=1.2A(average) / 3.2A (peak)<br/>         Standby control to save power<br/>         CW/CCW/short brake/stop motor control modes<br/>         Built-in thermal shutdown circuit and low voltage detecting circuit<br/>         All pins of the TB6612FNG broken out to 0.1" spaced pins<br/>         Filtering capacitors on both supply lines<br/>         Size: 2x2cm(approx)</p> | No. | 10 |
| 5 | PCA9685 16 Channel Servo Driver | <p>Adjustable frequency PWM up to about 1.6 KHz<br/>         Configurable push-pull or open-drain output<br/>         Output enable pin to quickly disable all the outputs<br/>         12-bit resolution for each output – for servos, that means about 4us resolution at 60Hz update rate<br/>         6 address select pins so you can wire up to 62 of these on a single i2c bus, a total of 992 outputs – that's a lot of servos or LEDs</p>                                   | No. | 4  |

|   |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |     |    |
|---|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| 6 | XL4015 Buck Converter   | <p>Module Nature: Non-isolated buck module (BUCK)<br/> Input voltage: 4-38V (input should try not to exceed 38V)<br/> Output voltage: 1.25-36V continuously adjustable<br/> Output current: 0-5A<br/> Output power: 75W<br/> Operating temperature: -40 ~ +85 degrees<br/> Operating frequency: 180KHz<br/> Conversion efficiency: up to 96%<br/> Load regulation: <math>S(I) \leq 0.8\%</math> (input 24V, output 12V, load from 1 ~ 4.5A when measured)<br/> Voltage regulation: <math>S(u) \leq 0.8\%</math> (output 12V, 4A, the voltage measured from 18 to 32V)<br/> Power indicator: Yes<br/> Short circuit protection: Yes (limit current 8A)<br/> Over-temperature protection: Yes (over-temperature automatically turn off the output)<br/> Input Reverse Protection: None, (if required, enter the high-current diode in the input string)<br/> Installation: 2 3mm screws<br/> Wiring method: welding, V-IN for the input, V-OUT for the output.<br/> L x W x H : 54 x 23 x 18mm</p> | No. | 4  |
| 7 | SR-04 Ultrasonic sensor | <p>Input Voltage: 5V<br/> Working Current: 15mA<br/> Standby current: less than 2mA<br/> Working Frequency: 40KHz<br/> Induction Angle: <math>&lt;15^\circ</math><br/> Distance Range: 2cm ~ 400cm<br/> Resolution : 1cm<br/> Trigger Input Pulse Width: 10uS<br/> Pin Number: 4 Pin<br/> Interface: TTL<br/> Compatible with Arduino<br/> Size: 45mm x 20mm x 15mm</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | No. | 12 |

|    |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |     |   |
|----|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---|
| 8  | TCRT5000 Sensor Module                                | 5-way reflective optical sensors mounted in line (TCRT5000 or equivalent)<br>On-board hex inverter provide clean digital output<br>Sensitive to dark color and infrared<br>Operating Voltage : 5 V (recommended)<br>Comes with M3 flexible mounting slot                                                                                                                                                                                                          | No. | 5 |
| 9  | USB Microphone                                        | Sensitivity: -67 dBV/pBar, -47 dBV/Pascal +/-4dB<br>Frequency Response: 100-16kHz<br>Working voltage: 4.5V<br>Size: 2cm x 2cm x 0.5cm<br>Color: Black.                                                                                                                                                                                                                                                                                                            | No. | 3 |
| 10 | Buffer Speaker 8 ohm 1 watt                           | impedance: 8ohms    Power rating: 1 W    dia: 1-3in<br>buffer                                                                                                                                                                                                                                                                                                                                                                                                     | No. | 5 |
| 11 | MAX9814 Auto Gain Control Stable Microphone Amplifier | Supply Voltage: 2.7v-5.5v @ 3mA current<br>Output: 2Vpp on 1.25V bias<br>Frequency Response: 20Hz – 20KHz<br>Programmable Attack and Release Ratio<br>Automatic gain, selectable max from 40dB, 50dB or 60dB<br>Low Input-Referred Noise Density of 30nV/<br>Low THD: 0.04% (typ)                                                                                                                                                                                 | No. | 5 |
| 12 | DFPlayer Mini MP3 Player Module                       | supports sampling rates (KHz): 8 / 11.025 / 12/16 / 22.05 / 24/32 / 44.1 / 48<br>24-bit DAC output, support dynamic range: 90dB, SNR support: 85dB<br>fully supports FAT16, FAT32 file system, maximum support 32G TF card, support U disk to 32G, 64M bytes NORFLASH<br>a variety of control modes are available. IO control, serial port, AD button control mode<br>radio spots language function, you can pause the background music being played. Advertising | No. | 5 |

|    |                                     |                                                                                                                                                                                                                                                                     |     |   |
|----|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---|
|    |                                     | finished playing background sound continues to play back the audio data is sorted by folder, supports up to 100 folders, folders can be assigned to every 255 Tracks<br>30 level adjustable volume, six adjustable EQ                                               |     |   |
| 13 | BNO 055 IMU                         | Dimensions: 20mm x 27mm x 4mm / 0.8" x 1.1" x 0.2"<br>Header holes begin 4mm from the mounting holes<br>Mounting Hole dimensions: 20mm x 12mm apart<br>Uses I2C address 0x28 (default) or 0x29                                                                      | No. | 2 |
| 14 | Andriod Tablet Lenovo or Equivalent | Brand: Lenovo<br>Docomo D-42A<br>8.0 inches TFT LCD Display<br>4GB Ram<br>64GB Storage<br>Operating System: Android 10<br>CPU: Snapdragon 665 2.0GHz + 1.8GHz Octa Core<br>Main Camera: 8MP<br>Front Camera: 2MP<br>WIFI<br>Bluetooth<br>Battery Capacity: 5000 mah | No. | 1 |

|    |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |   |
|----|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---|
| 15 | OAK d lite stereo camera             | <p>RVC2 architecture on-board features:<br/> 4 TOPS of processing power (1.4 TOPS for AI - RVC2 NN Performance)<br/> Run any AI model, even custom architected/built ones (models need to be converted)<br/> Encoding: H.264, H.265, MJPEG - 4K/30FPS, 1080P/60FPS<br/> Computer vision: warp (undistortion), resize, crop via ImageManip node, edge detection, feature tracking. You can also run custom CV functions<br/> Stereo depth perception with filtering, post-processing, RGB-depth alignment, and high configurability<br/> Object tracking: 2D and 3D tracking with ObjectTracker node<br/> Base line: 75 mm<br/> Ideal depth range: 40cm - 8m. See technical specifications.<br/> Power consumption: Up to 5W. See technical specifications<br/> Industrial grade aluminum housing with Front Gorilla Glass<br/> 1/4" tripod mount and 75mm M4 Vesa mount<br/> Dimensions: 91x28x17.5 mm<br/> Weight: 61g</p> | No. | 1 |
| 16 | Oak d lite stereo camera usb 3 cable | <p>The USB 3.0 AM/CM SuperSpeed cable of 3ft/1m, tested, validated, and sourced by Luxonis</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | No. | 2 |

|    |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |     |   |
|----|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---|
| 17 | Nvidia Jetson Nano  | <p>GPU: 128-core Maxwell<br/> CPU: Quad-core ARM A57 @ 1.43 GHz<br/> Memory: 4 GB 64-bit LPDDR4 25.6 GB/s<br/> Storage: microSD (not included)<br/> Video Encoder: 4K @ 30   4x 1080p @ 30   9x 720p @ 30 (H.264/H.265)<br/> Video Decoder: 4K @ 60   2x 4K @ 30   8x 1080p @ 30   18x 720p @ 30 (H.264/H.265)<br/> Camera: 2x MIPI CSI-2 DPHY lanes<br/> Connectivity: Gigabit Ethernet, M.2 Key E<br/> Display: HDMI 2.0 and eDP 1.4<br/> USB: 4x USB 3.0, USB 2.0 Micro-B<br/> Others: GPIO, I2C, I2S, SPI, UART<br/> Mechanical: 100 mm x 80 mm x 29 mm</p>                                                                                                                         | No. | 1 |
| 18 | Raspberry pi 5 16gb | <p>Processor: Quad-core ARM Cortex-A76, capable of high performance for computing tasks.<br/> Memory: 16GB LPDDR4x RAM, ensuring smooth operation and the ability to handle complex workloads.<br/> Graphics: Dual 4K display output via micro-HDMI ports, supporting a rich visual experience.<br/> Connectivity:<br/> USB Ports: 2x USB 3.0 and 2x USB 2.0 ports for fast data transfer and peripheral connectivity.<br/> Networking: Gigabit Ethernet and dual-band 802.11ac Wi-Fi for robust and flexible network connections.<br/> Bluetooth: Bluetooth 5.0 for connecting to various devices and accessories.<br/> Storage: MicroSD card slot for easy and expandable storage</p> | No. | 1 |

|    |                  |                                                                                                                                                                                                                                                                                                                                 |     |     |
|----|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|
|    |                  | options.<br>Power: 5V USB-C power input, ensuring efficient power delivery and compatibility with a wide range of power supplies.<br>GPIO: 40-pin GPIO header for interfacing with sensors, actuators, and other hardware.                                                                                                      |     |     |
| 19 | Pi cam v1.3      | 5MP Omnivision 5647 Camera Module<br>Still Picture Resolution: 2592 x 1944<br>Video: Supports 1080p @ 30fps, 720p @ 60fps and 640x480p 60/90 Recording<br>15-pin MIPI Camera Serial Interface – Plugs Directly into the Raspberry Pi Board<br>Size: 20 x 25 x 9mm<br>Weight 3g<br>Fully Compatible with many Raspberry Pi cases | No. | 1   |
| 20 | RP Lidar A1 2D   | Company: SLAMTEC<br>Part Number: A1M8-R6<br>Gross Weight: 0.001kg<br>Sensor Type: Proximity<br>Typical Input Voltage: 3.3VDC/ 5VDC<br>Operating Current: 600mA<br>Interface: Digital<br>Communication Protocol: UART<br>USB                                                                                                     | No. | 1   |
| 21 | Capacitor 1000uF | 1000uf 25V Electrolytic Capacitor<br>1000uF Aluminium Electrolytic Capacitor<br>Polarized<br>Voltage Rating = 25 VDC<br>Tolerance = 20%<br>Size: 10x20 mm<br>Lead/Terminal Type = Radial                                                                                                                                        | No. | 120 |

|    |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                       |     |     |
|----|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|
| 22 | Capacitor 470uF                                    | 470uF Aluminium Electrolytic Capacitor<br>Polarized<br>Voltage Rating = 16 VDC<br>Tolerance = 20%<br>Size: 8×11 mm<br>Lead/Terminal Type = Radial                                                                                                                                                                                                                                                     | No. | 120 |
| 23 | Resistor 10k ohm                                   | 1% through hole Resistor<br>1/4 Watt<br>0.25 Watt                                                                                                                                                                                                                                                                                                                                                     | No. | 120 |
| 24 | Resistor 1k ohm                                    | 5% through hole Resistor<br>1/4 Watt<br>0.25 Watt                                                                                                                                                                                                                                                                                                                                                     | No. | 120 |
| 25 | Transistor IRF540n                                 | Drain-Source Volt (Vds): 100V<br>Drain-Gate Volt (Vdg): 100V<br>Gate-Source Volt (Vgs): 20V<br>Drain Current (Id): 30A<br>Power Dissipation (Ptot): 150W<br>Type: N-Channel                                                                                                                                                                                                                           | No. | 20  |
| 26 | 5mm Pitch 2 Pin Pcb Screw Terminal Block Connector | Pitch: 5.0mm<br>Poles: 2P<br>Screw: M2.5/ Steel/ Zinc plated or Brass<br>Wire cage: Steel Zinc plated or Brass Ni plated<br>Pin header: Brass/ Tin Plated<br>Rated voltage: 300V<br>Rated current: 10A<br>Withstanding voltage: AC2000V/1 Min<br>Wire range: 22-12 AWG<br>Temperature range: -40°C - +105°C<br>MAX soldering: +250°C for 5 sec.<br>Torque: 0.4 Nm (3.5 lb. in)<br>Strip length: 6-7mm | No. | 20  |
| 27 | Kcd-107 Spst Round Rocker Switch Button            | Type: On/OFF (SPST)<br>Terminals: 2 Terminals<br>Voltage & Current: 6A 250V AC(for resistive load only) 10A 125V AC(for resistive load only)<br>Total Size(Each One): 23 x 29mm/ 0.9" x 1.1"(D*T)<br>Mount Hole Diameter: 19mm / 0.75"<br>Colour: Black                                                                                                                                               | No. | 20  |

|    |                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |   |
|----|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---|
|    |                                                                                                 | Material: Plastic & Metal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |   |
| 28 | Hard jumper wires black                                                                         | Pin to Pin configuration<br>Available in minimum 1 meter (100cm) lengths and longer<br>Individual cores or wires can be separated for multi-purpose use<br>Each core in cable is individual separate color!<br>10 thin wires packaged in a spiral cable wrap                                                                                                                                                                                                                                                                                                                                                                                           | meter | 5 |
| 29 | Hard jumper wires white                                                                         | Pin to Pin configuration<br>Available in minimum 1 meter (100cm) lengths and longer<br>Individual cores or wires can be separated for multi-purpose use<br>Each core in cable is individual separate color!<br>10 thin wires packaged in a spiral cable wrap                                                                                                                                                                                                                                                                                                                                                                                           | meter | 5 |
| 30 | Solderable Wire Flexible<br>Wires For Wiring Jumper<br>Wire Wiring Wire , Wiring Cable<br>Red   | Super flexible.<br>High Strand Count.<br>Pure silicone Insulation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | meter | 5 |
| 31 | Solderable Wire Flexible<br>Wires For Wiring Jumper<br>Wire Wiring Wire , Wiring Cable<br>black | Super flexible.<br>High Strand Count.<br>Pure silicone Insulation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | meter | 5 |
| 32 | PS4 Remote Control                                                                              | the DualShock 4 Wireless Controller features a built in speaker and stereo headset jack, putting several new audio options in the player's hands<br>The Dualshock 4 wireless controller can be easily recharged by plugging it into your PlayStation 4 system, even when in rest mode, or with any standard charger using a USB cable (type A to micro B sold separately)<br>Motion sensors - Rock and roll as a highly sensitive built-in accelerometer and gyroscope detect the motion, tilt and rotation of your DUALSHOCK 4 wireless controller<br>DualShock 4 Wireless Controller PS4 and PC compatible. Item PS5 is compatible only when playing | No.   | 3 |

|    |                                                                             |                                                                                                                                                                                                                                                                                                                                                                    |     |     |
|----|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|
|    |                                                                             | PS4 games                                                                                                                                                                                                                                                                                                                                                          |     |     |
| 33 | Charger                                                                     | Input: 100V - 240V AC, 50 - 60 Hz 0.5A<br>Output Voltage: 9V DC<br>Output Current: 1A<br>Weight: 121g                                                                                                                                                                                                                                                              | No. | 4   |
| 34 | Battery 8.4V 3200mAh                                                        | Lithium ion or lithium polymer cell battery pack                                                                                                                                                                                                                                                                                                                   | No. | 6   |
| 35 | Battery 6V 3200mAh                                                          | Lithium ion or lithium polymer cell battery pack                                                                                                                                                                                                                                                                                                                   | No. | 3   |
| 36 | 3 Pin Jst Xh 2.5mm Side Entry Header Right Angle                            | Jst Connectors                                                                                                                                                                                                                                                                                                                                                     | No. | 100 |
| 37 | 2 Pin JST-XH Male Right Angle 2515 Connector 2.54mm Pitch                   | Jst Connectors                                                                                                                                                                                                                                                                                                                                                     | No. | 50  |
| 38 | 2 Wires 2.54mm Pitch Female Jst Xh Connector Cable Wire                     | Jst Connectors                                                                                                                                                                                                                                                                                                                                                     | No. | 50  |
| 39 | 3 Wires 2.54mm Pitch Female Jst Xh Connector Wire 6 Inch One Side Connector | Jst Connectors                                                                                                                                                                                                                                                                                                                                                     | No. | 50  |
| 40 | Raspberry pi AI Hat + 2                                                     | Hailo-10H AI accelerator delivering 40 TOPS (INT4) inferencing performance<br><br>Performance for computer vision models comparable to the Raspberry Pi AI HAT+ (26 TOPS)<br><br>Runs generative AI models efficiently using 8GB on-board RAM<br><br>Fully integrated into Raspberry Pi's camera software stack<br><br>Conforms to Raspberry Pi HAT+ specification | No. | 1   |
| 41 | Raspberry pi AI HAT + 2 heatsink,                                           | Heatsink                                                                                                                                                                                                                                                                                                                                                           | No. | 1   |
| 42 | Stacking header of Raspberry pi AI hat +2 with pi5                          | 16mm stacking header, spacers, and screws to enable fitting on Raspberry Pi 5 with Raspberry Pi Active Cooler in place                                                                                                                                                                                                                                             | No. | 1   |

|    |                                        |                                                                                                                                                                                                                                                       |       |     |
|----|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----|
| 43 | PCB Fabrication                        | 2 layer PCB<br>size = 80mm x 140mm<br>Double sided PTH                                                                                                                                                                                                | No.   | 4   |
| 44 | Active Cooler for Raspberry Pi 5       | The Active Cooler combines a large metal heatsink with a high-quality variable-speed blower fan, powered and controlled via the fan connector on the Raspberry Pi 5, attached to the board via sprung pins into the dedicated pair of mounting holes. | No.   | 2   |
| 45 | Black Color 6 Inch Cable Tie/ Zip Ties | 6in<br>Black Color                                                                                                                                                                                                                                    | No.   | 100 |
| 46 | White Nylon 200mm Cable Tie/zip tie    | 200mm<br>White Color                                                                                                                                                                                                                                  | No.   | 100 |
| 47 | 4 Inch 100mm Pvc Cable Tie/ Zip Tie    | 100mm<br>White Color                                                                                                                                                                                                                                  | No.   | 100 |
| 48 | Heat Shrinks Sleeve 1mm                | 1mm wide                                                                                                                                                                                                                                              | meter | 5   |
| 49 | Heat Shrinks Sleeve 2mm                | 2mm wide                                                                                                                                                                                                                                              | meter | 5   |
| 50 | Heat Shrinks Sleeve 3mm                | 3mm wide                                                                                                                                                                                                                                              | meter | 5   |
| 51 | Heat Shrinks Sleeve 6mm                | 6mm wide                                                                                                                                                                                                                                              | meter | 5   |
| 52 | Heat Shrinks Sleeve 9mm                | 9mm wide                                                                                                                                                                                                                                              | meter | 5   |

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Note:</b> | <ul style="list-style-type: none"> <li>• The technical drawings will be shared exclusively with the successful supplier upon signing a Non-Disclosure Agreement (NDA)</li> <li>• All equipment should of required brand or equivalent.</li> <li>• Delivery of all equipment/consumables will be at NCRA, College of E&amp;ME, NUST Rawalpindi</li> <li>• Samples may be called from winning vendor</li> <li>• One vendor can apply for one or more but complete lot(s)</li> <li>• Quantity may be increased or decreased depending upon quoted rates and availability of funds</li> <li>• All equipment should have one-year local warranty and consumables have one-month local warranty, (If international, Local supplier will be responsible for all claim expenses)</li> </ul> |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 2. Scope of Bid

- 2.1 The Employer as defined in the Bidding Data hereinafter called “the Employer” invite bids for the Supply of Electrical & Mechanical Consumables as described in these Bidding Documents, and summarized in the Bidding Data hereinafter referred to as the “Supply & Services”.
- 2.2 The successful bidder(s) will be expected to complete the supplies/services within the time specified in bidding data sheet and bid documents.

### 3. Work to be performed:

- 3.1 The work shall include all required services for the Supply of Electrical & Mechanical Consumables as described in technical specification according to the International Code and standards as specified in the documents. Specific to this, company will be required to supply and services tailored to the needs of NCRA. The transportation / editing / travel / boarding / lodging / equipment or any other facility required to complete the project should be included in the bid price. No additional charges will be accepted during the work.

### 4. Period of performance:

- 4.1 All supplies for this project shall be completed within/till the time frame mentioned in the scope of work depending upon the Lab Equipment/Consumables required, maximum time for the project completion will be 90 calendar days after date of signing of the contract/issuance of purchase order.

### 5. Eligible Bidders

- 5.1 This Invitation for Bids is open for all registered / authorized firms having a registered business. The firm must have a valid NTN and sales tax registration; in case of tax exemption the interested bidder will have to submit valid exemption certificate if required.
- 5.2 As the employer areas of implementation are non-tax exempted region of Pakistan, so the supplies completion submitted to the employer by the employee shall quote the price inclusive of all taxes, in case of exemption the employee will provide the valid tax exemption certificate.
- 5.3 The company, organization or individual is not listed in the sanction and embargo list of Government of Pakistan.
- 5.4 The company, organization or individual is not legally barred from the procurement process on the grounds of previous violations of regulations on fraud and corruption.
- 5.5 The company, organization or individual is not contracted for considerable portions of the contract is an enterprise economically intertwined with persons conducting the tender.
- 5.6 The company, organization or individual are not subject to a conflict of interest.
- 5.7 The company, organization or individual are not guilty of misrepresentation in supplying the information required as condition of participation in the contract procedure or fail to supply this information.
- 5.8 They are not bankrupt or being wound up, are having their affairs administered by the courts, have entered into an arrangement with creditors, have suspended business activities, are the subject of proceedings concerning those matters, or are in any analogous situation arising from a similar procedure provided for in national legislation or regulations;

### 6. Qualifications of the bidders

- 6.1 All bidders shall provide the technical proposal - the description of supply, services, work methodology and work program as necessary.

## 7. Bid per Bidder

- 7.1 Each bidder shall submit only one bid, either by individually, or as a partner in a joint venture. A bidder who submits or participates in more than one bid (other than alternatives pursuant to Clause IB.20) will be disqualified.

## 8. Cost of Bidding

- 8.1 The bidders shall bear all costs associated with the preparation and submission of their respective bids and the Employer will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

## 9. Project Handing Taking Location

- 9.1 The supplier shall deliver all required goods & services and hand over the completed project at the following address:

**Procurement Officer**  
**NCRA, College of E&ME, NUST, Peshawar Road, Rawalpindi**

- 9.2 All the expenses incurred during the project will be the responsibility of supplier/tenderer

## BIDDING DOCUMENTS

### 10. Content of Bidding Documents

- 10.1 The Tender Documents, in addition to invitation for bids, are those stated below and should be read in conjunction with any Addenda issued in accordance with Clause IB.12 and all documents shall be signed /stamped by the bidder or his legally authorized representative and returned to the address according to the Bidding Data Sheet.
- (a) Tender Condition/ ITB in accordance of the annex\_1.
  - (b) Tender Form in accordance of the annex\_2.
  - (c) Declaration of undertaking in accordance of the annex\_3.
  - (d) Technical Bidder Form in accordance of the annex\_4.
  - (e) Technical Specification Form in accordance of the Annex\_5
  - (f) Financial Offer Forms in accordance of the annex\_6.

The bidders are expected to examine carefully the contents of all the above documents. Failure to comply with the requirements of bid submission will be at the Bidder's own risk, bids that are not substantially responsive to the requirements of the Bidding Documents will be rejected.

## 11. Clarification of Bidding Documents

- 11.1 Any prospective bidder requiring any clarification(s) in respect of the Bidding Documents may notify the Employer in writing over EPADs. The Employer will respond to any request for clarification which he receives earlier than 5 days prior to the deadline for submission of bids.
- 11.2 Copies of the Employer's response will be forwarded to all purchasers of the Bidding Documents, including a description of the enquiry but without identifying its source.

## 12. Amendment of Bidding Documents

- 12.1 At any time prior to the deadline for submission of bids, the Employer may, for any reason, whether at his own initiative or in response to a clarification requested by a prospective bidder, modify the Bidding Documents by issuing addendum.
- 12.2 Any addendum thus issued shall be part of the Bidding Documents pursuant to Sub- Clause 10.1 hereof and shall be communicated in writing to all purchasers of the Bidding Documents. Prospective bidders shall acknowledge receipt of each addendum in writing to the Employer.
- 12.3 To afford prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may extend the deadline for submission of bids in accordance with Clause IB.21 & 22.

## PREPARATION OF BIDS

### 13. Language of Bid

- 13.1 The bid and all correspondence and documents related to the bid exchanged by a bidder and the Employer shall be English language.

### 14. Bid Documents

- 14.1 Bidders must submit a single sealed envelope containing all required documents, including technical details and financial proposals.
- 14.2 The following documents should be enclosed in the bid by tenderer,
1. Tender Condition/ ITB in accordance of the annex\_1. Stamped all pages.
  2. Tender Form in accordance of the annex\_2. On Letter Head
  3. Declaration of undertaking in accordance of the annex\_3. On Letter Head
  4. Technical Bidder Form in accordance of the annex\_4. Stamped all pages.
  5. Technical Specifications in accordance of the annex\_5. Stamped all pages.
  6. Evidence of access to financial resources along with average annual related work turnover.
  7. Tenderer's Profile
  8. Financial Offer Forms in accordance of the annex\_6
  9. Bid Security (As per clause 18)

### 14.3 Instructions for the bidders, applying under joint venture

Bids submitted by a joint venture of two (2) or more firms shall comply with the following requirements:

- (a) The bid and in case of a successful bid, the Form of Contract Agreement shall be signed so as to be legally binding on all partners;
  - (b) one of the joint venture partners shall be nominated as being in charge; and this authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the joint venture partners;
  - (c) The partner-in-charge shall always be duly authorized to deal with the Employer regarding all matters related with and/or incidental to the execution of Works as per the terms and Conditions of Contract and in this regard to incur any and all liabilities, receive instructions, give binding undertakings and receive payments on behalf of the joint venture;
  - (d) All partners of the joint venture shall at all times and under all circumstances be liable jointly and severally for the execution of the Contract in accordance with the Contract terms and a statement to this effect shall be included in the authorization mentioned under Sub-Para (b) above as well as in the Form of Bid and in the Form of Contract Agreement (in case of a successful bid); and
  - (e) A copy of the agreement entered into by the joint venture partners shall be submitted with the bid stating the conditions under which it will function, its period of duration, the persons authorized to represent and obligate it and which persons will be directly responsible for due performance of the Contract and can give valid receipts on behalf of the joint venture, the proportionate participation of the several firms forming the joint venture, and any other information necessary to permit a full appraisal of its functioning. No amendments / modifications whatsoever in the joint venture agreement shall be agreed to between the joint venture partners without prior written consent of the Employer.
- 14.4 Bidders shall also submit proposals of work methods and schedule, in sufficient Detail to demonstrate the adequacy of the Bidders' proposals to meet the technical specifications and the completion time.

## 15. Bid Prices

- 15.1 All prices (unit prices, lump-sum prices) shall be stated with **inclusive of all** applicable tax (in accordance with the current tax laws of the Islamic Republic of Pakistan).
- 15.2 The bidder shall add the tax amount to the net total price of the project.
- 15.2 The bidders shall fill in rates and prices for all items of the Supply/ services described in the Financial Offer Form. Items against which no rate or price is entered by a bidder will be considered as incomplete bid and will be subject to disqualification of their bid.
- 15.3 All duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as on the date 28 days prior to the deadline for submission of bids shall be included in the rates and prices and the total Bid Price submitted by a bidder. Additional / reduced duties, taxes and levies due to subsequent additions or changes in legislation shall be reimbursed.

## 16. Currencies of Bid and Payment

16.1 The offer should follow the given structure and prices shall be quoted in **Pakistani Rupees (PKR)**.

## 17. Bid Validity Period

17.1 Tenders must remain valid for a period of 90 days after the deadline for submission of tenders.

17.2 In exceptional circumstances, prior to expiry of the original bid validity period, the Employer may request that the bidders extend the period of validity for a specified additional period which shall in no case be more than the original bid validity period. The request and the responses thereto shall be made in writing. A bidder may refuse the request without forfeiting his Bid Security. A bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of his Bid Security for the period of the extension.

## 18. Bid Security

18.1 Each bidder shall furnish, as part of his bid, a Bid Security @ 3% of the total bids value in the form of Demand Draft/ Pay Order/ Call Deposit/ Bank Guarantee in favor of “**National Center of Robotics and Automation-NUST**” in PKR currency.

18.2 The Bid Security shall be, at the option of the bidder, in the form of Deposit at Call or a Bank Guarantee issued by a Scheduled Bank in Pakistan or from a foreign bank duly counter guaranteed by a Scheduled Bank in Pakistan in favors of the Employer valid for a period as the Bid Validity date.

18.3 Any bid not accompanied by an acceptable Bid Security shall be rejected by the Employer as non-responsive.

18.4 The bid securities of unsuccessful bidders will be returned as promptly as possible, but not later than 30 days after the expiration of the period of Bid Validity.

18.5 The Bid Security of the successful bidder will be returned when the bidder has furnished the required Performance Security and signed the Contract Agreement.

18.6 The Bid Security may be forfeited:

- (a) If the bidder withdraws his bid except as provided in Sub-Clause 24.1;
- (b) If the bidder does not accept the correction of his Bid Price pursuant to Sub-Clause 29.2 hereof; or
- (c) In the case of successful bidder, if he fails within the specified time limit to:
  - (i) Furnish the required Performance Security; or
  - (ii) Sign the Contract Agreement.

## 19. Format and Signing of Bid

19.1 Bidders are particularly directed that the amount entered on the Form of Bid shall be for performing the Contract strictly in accordance with the Bidding Documents.

19.2 All appendices to Bid are to be properly completed and signed.

19.3 No alteration is to be made in the Form of Bid nor in the Appendices thereto except in filling up the blanks as directed. If any such alterations be made or if these instructions be not fully complied with, the bid may be rejected.

- 19.4 Each bidder shall prepare by filling out the forms completely and without alterations, specified in the Bidding Data.
- 19.5 The documents of the bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the bidder pursuant to Sub-Clause 14.1(a) hereof. All pages of the bid shall be initialed and stamped by the person or persons signing the bid.
- 19.6 The bid shall contain no alterations, omissions or additions, except to comply with instructions issued by the Employer, or as are necessary to correct errors made by the bidder, in which case such corrections shall be initialed by the person or persons signing the bid.
- 19.7 Bidders shall indicate in the space provided in the Form of Bid their full and proper addresses at which notices may be legally served on them and to which all correspondence in connection with their bids and the Contract is to be sent.
- 19.8 Bidders should retain a copy of the Bidding Documents as their file copy.

## 20. **Alternative Bid**

- 20.1 Alternative bids are not allowed to be attached.

## **SUBMISSION OF BID:**

### **21. Submission, Sealing & Marking of Bids**

- 21.1 The firm must submit:

#### **i) THROUGH EPADS:**

##### **(a) Technical Proposal & Financial Proposal:**

Scanned copy of original proposal in pdf format.

#### **ii) MANUAL SUBMISSION:**

##### **(a) Tender Fee & Bid Security:**

Tender Fee & Bid Security at address Procurement Officer, NCRA, College of E&ME, NUST, Peshawar Road, Rawalpindi

Eligible tenderers shall submit their Securities in sealed envelope(s) **by courier, registered mail or by hand.**

- 21.2 The envelope of your bidding documents shall be marked as following:

##### **(a) Bidding document for:**

Supply of Electrical & Mechanical Consumables

Under;

Project Reference: NUST/EME/NCRA-2026-249

- (c) Be addressed to the Employer at the address provided in the Bidding Data;
  - (d) Provide a warning; **Not to open before the time and date for bid opening**, as specified in the Bidding Data.
- 21.4 In addition to the identification required in Sub- Clause 21.2 hereof, the inner envelope shall indicate the name and address of the bidder to enable the bid to be returned unopened in case it is declared “late” pursuant to Clause IB.23
- 21.5 If the outer envelope is not sealed and marked as above, the Employer will assume no responsibility for the misplacement or premature opening of the Bid.

## 22. Deadline for Submission of Bids

- 22.1 (a) Bids must be uploaded and received to the Employer at the address specified no later than the time and date stipulated in the Bidding Data.
- (b) Bids with charges payable will not be accepted, nor will arrangements be undertaken to collect the bids from any delivery point other than that specified above. Bidders shall bear all expenses incurred in the preparation and delivery of bids. No claims will be entertained for refund of such expenses.
- (c) Where delivery of a bid is by hand and the bidder wishes to receive an acknowledgment of receipt of such bid, they shall make a request for such acknowledgment in a separate letter attached to but not included in the sealed bid package.
- (d) Upon request, acknowledgment of receipt of bids will be provided to those making delivery in person or by messenger.
- 22.2 The Employer may, at his discretion after approval from donor, extend the deadline for submission of bids by issuing an amendment in accordance with Clause IB.12, in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline will thereafter be subject to the deadline as extended.

## 23. Late Bids

- 23.1 Any bid Hard copy received to the Employer after the deadline for submission of bids prescribed in Clause IB.21 will be returned unopened to such bidder.
- 23.2 Delays in the mail, delays of person in transit, or delivery of a bid to the wrong office shall not be accepted as an excuse for failure to deliver a bid at the proper place and time. It shall be the bidder’s responsibility to determine the manner in which timely delivery of his bid will be accomplished either in person, by messenger or by mail.

## 24. Modification, Substitution and Withdrawal of Bids

- 24.1 The bidder may modify or withdraw its bid after submission through EPADS prior to the deadline prescribed for bid submission. Revision of bid may be submitted electronically through EPADS after withdrawal of original bid before the deadline of submission of bid. No bid may be modified after the deadline of submission of bids.

- 24.2 No bid may be withdrawn in the interval between the bid submission deadline and the expiration of the bid validity period specified in ITB. Withdrawal of a bid during this interval may result in the forfeiture of the bidder's bid security.
- 24.3 No bid can be withdrawn in the interval between the deadline for submission of bids and the expiry of the bid validity period. Withdrawal of a bid during this interval will result in the Bidder's forfeiture of its bid security.

## **BID OPENING:**

### **25. Bid Opening**

- 25.1 The opening of the submitted bid documents will take place in single stages basis:
- i. **Technical Proposal:** the technical bid shall open electronically through EPADS all proposals excluding withdrawals in public, in the presence of bidders' representatives who choose to attend, at the time, on the date and at the place specified in the BDS. Bidders' representatives shall sign a register as proof of their attendance. Envelope will be opened at the same time (Only one representative of the bidder would be invited to the bids opening session).
  - ii. **Financial Proposal:** The price quotation remains unchecked and are only seen and verified for those applicants who are qualified in the assessment of the technical bids.
  - iii. The applicants who will not declared successful in technical evaluation the Price proposal will be returned to those bidders.
  - iv. The bidders' representatives who are present shall sign a register evidencing their attendance.
- 25.2 The bidder's name, total Bid Price and price of any Alternate Proposal(s), any discounts, bid modifications, substitution and withdrawals, the presence or absence of Bid Security, and such other details as the Employer may consider appropriate, will be announced by the Employer at the opening of bids for bidders who are successful in technical evaluation.
- 25.3 Employer shall prepare minutes of the bid opening, including the information disclosed to those present in accordance with the Sub-Clause 25.3.

### **26. Process to be Confidential**

- 26.1 Information relating to the examination, clarification, evaluation and comparison of bid and recommendations for the award of a contract shall not be disclosed to bidders or any other person not officially concerned with such process before the announcement of bid evaluation report which shall be done at least five (05) days prior to issue of Letter of Acceptance. The announcement to all Bidders will include table(s) comprising read out prices, discounted prices, price adjustments made, final evaluated prices and recommendations against all the bids evaluated. Any effort by a bidder to influence the Employer's processing of bids or award decisions may result in the rejection of such bidder's bid. Whereas any bidder feeling aggrieved may lodge a written complaint not

later than fifteen (15) days after the announcement of the bid evaluation report; however mere fact of lodging a complaint shall not warrant suspension of the procurement process.

## **27. Clarification of Bids**

- 27.1 To assist in the examination, evaluation and comparison of bids, the Employer may, at his discretion, ask any bidder for clarification of his bid, including breakdowns of unit rates. The request for clarification and the response shall be in writing but no change in the price or substance of the bid shall be sought, offered or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the bids in accordance with Clause IB.30.

## **28. Examination of Bids and Determination of Responsiveness**

- 28.1 Prior to the detailed evaluation of bids, the Employer will determine whether each bid is substantially responsive to the requirements of the Bidding Documents.
- 28.2 A substantially responsive bid is one, which (i) meets the eligibility criteria; (ii) has been properly signed; (iii) is accompanied by the required Bid Security; and (iv) conforms to all the terms, conditions and specifications of the Bidding Documents, without material deviation or reservation. A material deviation or reservation is one (i) which affect in any substantial way the scope, quality or performance of the Works; (ii) which limits in any substantial way, inconsistent with the Bidding Documents, the Employer's rights or the bidder's obligations under the Contract; or (iii) adoption/rectification whereof would affect unfairly the competitive position of other bidders presenting substantially responsive bids.
- 28.3 If a bid is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

## **29. Correction of Errors**

- 29.1 Bids determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows:
- (a) Where there is a discrepancy between the amounts in figures and in words, the amount in words will govern; and
  - (b) where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern, unless in the opinion of the Employer there is an obviously gross misplacement of the decimal point in the unit rate, in which case the line item total as quoted will govern and the unit rate will be corrected.
- 29.2 The amount stated in the Form of Bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and with the concurrence of the bidder, shall be considered as binding upon the bidder. If the bidder does not accept the

corrected Bid Price, his Bid will be rejected, and the Bid Security shall be forfeited in accordance with Sub- Clause 18.6(b) hereof.

### **Fraud and Corruption**

E&ME College requires that contracting authority, bidders, suppliers, contractors and their agents and any personnel thereof, observe the highest standard of ethics during the procurement and execution of financed contracts. For the purpose of this provision, the term set forth are defined below:

- (a) Corrupt practice is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value of influence improperly the actions of another party.
- (b) Fraudulent practice is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation.
- (c) Collusive practice is an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party.
- (d) Coercive practice is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party.
- (e) Obstructive practice is deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a E&ME college investigation into allegations of corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing in knowledge of matters relevant to the investigation or from pursuing the investigation.

### **EVALUATION & COMPARISON OF BIDS:**

#### **30. General**

30.1 The following Tenders shall be excluded:

- (a) Tenders received after opening date and time.
- (b) Tenders submitted by Bidders who have entered into an agreement, which constitutes a prohibited restriction of competition.
- (c) Bids that are not rejected are evaluated. The purpose of the evaluation is to determine the most advantageous offer by assessing the relevant factors of the individual bids and by subsequently comparing all the bids submitted. If specified in the bidding documents, the evaluation includes not only the price offered but also other factors that are relevant to the success of the project and that can be quantified. The bids that have not been rejected are examined individually for technical and arithmetic correctness. Bids are evaluated and weighted in quantitative terms, in monetary units where possible and only according to the criteria stipulated in the bidding documents.
- (d) The Procuring Agency shall evaluate the bids in a single stage; however, the evaluation shall be carried out in the following sequence
  - Preliminary examination
  - Technical evaluation
  - Financial evaluation of technically responsive bids only

### 31. Technical Evaluation

31.1 Bids will be evaluated in accordance with the following technical criteria:

- (a) Completeness of bid documents to whether the bidders had submitted all the documents and information required by the bidding documents.
- (b) Past experience of similar projects.
- (c) Financial ability (evidence of access to financial resources to meet the qualification requirements: cash in hand, lines of credit, etc).
- (d) Proposed Work Program (work plan) and the expected time frame that the project will be completed

The assessment criteria of Technical Proposal are as follows. The minimum qualify score in technical proposal is 70 points;

| Sr. No.                                                    | Criteria                                                                                                                                                                                                                                                                                                        | Marks Allocated |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 1                                                          | <b>Active Tax Payer (WHT &amp; SALES Tax)</b>                                                                                                                                                                                                                                                                   | Yes/No          |
| 2                                                          | <b>Agree to Technical Specification</b>                                                                                                                                                                                                                                                                         | Yes/No          |
| 3                                                          | <b>Declaration on Stamp Paper or Letter Head/Stamp</b>                                                                                                                                                                                                                                                          | Yes/No          |
| <b>*If answer to above question is yes proceed further</b> |                                                                                                                                                                                                                                                                                                                 |                 |
| 4                                                          | <b>Delivery Period (Calendar Days)</b><br>0 to 60 days = 10<br>61 to 70 days = 08<br>71 to 80 days = 06<br>81 to 90 days = 04<br>91 days & Above = 02                                                                                                                                                           | 20              |
| 5                                                          | <b>Relevant previous completed projects experience value basis and companies having work Experience July 2021 Till Date (Specific to Lab Equipment/Consumables)</b><br>02 Million and above =30<br>1.50 to 1.99 Million = 25<br>1.00 to 1.49 Million = 20<br>0.50 to 0.99 Million =15<br>below 0.50 Million =10 | 30              |
| 6                                                          | <b>Financial Business Turnover of the Company, Bank Statements and financial statements of last 3 years</b><br>2 Million and above = 20<br>1.50 to 1.99 Million = 16<br>1 to 1.49 Million = 12<br>0.5 to 0.99 Million= 08<br>below 0.50 Million=04                                                              | 20              |
| 7                                                          | <b>Presentation of the Bid</b><br>Supporting Document = 5<br>Annexure Proper Filled = 5                                                                                                                                                                                                                         | 05              |
| 8                                                          | <b>Realistic Work / Delivery plan</b><br>Work plan should be in bar chart form(one side Tasks                                                                                                                                                                                                                   | 10              |

|    |                                                                                                        |            |
|----|--------------------------------------------------------------------------------------------------------|------------|
|    | and one side days are written                                                                          |            |
| 9  | <b>Brand</b><br>Japan/USA/Europe= 10.<br>Singapore/ Malaysia/ Taiwan / Korea /China = 06<br>Others= 3. | 10         |
| 10 | <b>Make</b><br>Japan/USA/Europe= 05<br>Singapore/ Malaysia/ Taiwan / Korea /China = 03<br>Others= 1    | 05         |
|    | <b>Total</b>                                                                                           | <b>100</b> |

Only bids found responsive after preliminary and technical evaluation shall be considered for financial evaluation and comparison. The minimum qualifying technical score shall be 70 marks out of 100.

Bidders scoring less than the minimum qualifying score shall be declared technically non-responsive, and their financial proposals shall not be considered.

### 32. Financial Evaluation

32.1 The financial evaluation will be conducted for all bidders who meet the technical requirements.

32.2 The contract will be awarded to the lowest evaluated bidder (lowest bid price) among those who are technically qualified.

32.3 Any bid that does not meet the technical criteria will be disqualified, regardless of price.

32.4 In case of identical lowest bids, the bidder with better past experience and financial capacity will be given preference.

32.5 If a bid price appears to be unusually low in relation to the services to be rendered the bidder will be requested to submit a written breakdown of his price calculation. If after review of the notes submitted by the bidder reasonable doubts persist as to whether the required goods and works can be provided at the rates offered and if this is reasonably expected to pose a considerable risk to the performance of the contract, the bid in question will have to be excluded.

32.4 Evaluation of bid will be based on lot wise.

### G. AWARD OF CONTRACT:

#### 33. Award

33.1 Subject to Clauses IB.34, the Employer will award the Contract to the bidder whose bid has been determined to be substantially responsive to the Bidding Documents and who has offered the suitable evaluated Bid Price, provided that such bidder has been determined to be eligible in accordance with the provisions of Clause IB.5.

33.2 The Employer, at any stage of the bid evaluation, having credible reasons for or prima facie evidence of any defect in supplier's or contractor's capacities, may require the suppliers or contractors to provide information concerning their professional, technical, financial, legal or managerial competence whether already pre-qualified or not:

Provided that such qualification shall only be laid down after recording reasons therefore in writing. They shall form part of the records of that bid evaluation report.

### **34. Employer's Right to accept any Bid and to reject any or all Bids**

- 34.1 Notwithstanding Clause IB.30, the Employer reserves the right to accept or reject any Bid, and to annul the bidding process and reject all bids, at any time prior to award of Contract, without thereby incurring any liability to the affected bidders or any obligation except that the grounds for rejection of all bids shall upon request be communicated to any bidder who submitted a bid, without justification of grounds. Rejection of all bids shall be notified to all bidders promptly.

### **35. Notification of Award**

- 35.1 Prior to expiration of the period of bid validity prescribed by the Employer, the Employer will notify the successful bidder in writing ("Letter of Acceptance") that his Bid has been accepted. This letter shall name the sum which the Employer will pay the Contractor in consideration of the execution and completion of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Conditions of Contract called the "Contract Price").
- 35.2 No Negotiation with the bidder having evaluated as lowest responsive or any other bidder shall be permitted, however, Employer may have clarification meetings to get clarify any item in the bid evaluation report.
- 35.3 The notification of award and its acceptance by the bidder will constitute the formation of the Contract, binding the Employer and the bidder till signing of the formal Contract Agreement.
- 35.4 Upon furnishing by the successful bidder of a Performance Security, the Employer will promptly notify the other bidders that their Bids have been unsuccessful and return their bid securities.

### **36. Performance Security**

- 36.1 Only for lab equipment, the successful bidder shall furnish to the Employer a Performance Security in the form and the amount stipulated in the Bidding Data and the Conditions of Contract before the delivery.
- 36.2 Failure of the successful bidder to comply with the requirements of Sub-Clause IB.36.1 or Clauses IB.37 or IB.39 shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security.

### **37. Signing of Contract Agreement**

- 37.1 Within 14 days from the date of furnishing of acceptable Performance Security under the Conditions of Contract, the Employer will send the successful bidder the Contract Agreement, incorporating all agreements between the parties. The selected tenderer must sign and date the contract and return it to the contracting authority. On signing the contract, the successful tenderer will become the contractor and the contract will enter into force.
- 37.2 The formal Agreement between the Employer and the successful bidder shall be executed within 14 days of the receipt of the Contract Agreement by the successful bidder from the Employer.
- 37.3 The contracting authority reserves the right to vary the quantities specified for the goods/items of tender after approval from the competitive authority. The payment against agreed

goods supply will be made upon issued final purchase order for goods delivery to the defined destination in perfect condition.

- 37.4 Contract Agreement shall be assigned with the successful bidder(s), as per NUST policy. The provision of stamp paper (Rs 100/-) shall be the responsibility of firm which shall be delivered to Concerned School for award of contract within 3 days of Award Letter/issuance of Purchase Order

### 38. General Performance of the Bidders

The Employer reserves the right to obtain information regarding performance of the bidders on their previously awarded goods supply. The Employer may in case of consistent poor performance of any Bidder as reported by the employers of the previously awarded contracts, interlaid, reject his bid and/or refer the case to the relevant department in accordance with its rules, procedures and relevant laws of the land take such action as may be deemed appropriate under the circumstances of the case including black listing of such Bidder and debarring him from participation in future bidding for similar goods supplies.

### 39. Tender Fee

Tender fee of PKR 3000/- (Three Thousand only) should be attached with tender documents in form of bank draft/pay order in favor of “**National Center of Robotics and Automation-NUST**”.

### 40. Instructions not Part of Contract

Bids shall be prepared and submitted in accordance with these Instructions which are provided to assist bidders in preparing their bids, and do not constitute part of the Bid or the Contract Documents.

## SECTION II. BIDDING DATA SHEET (BDS)

| <b>General</b>             |                                                                                                                                                                  |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.1                        | The Employer is NCRA, E&ME College, Peshawar Road, Rawalpindi-Pakistan Overall, the project includes; <u>Supply of Electrical &amp; Mechanical Consumables.</u>  |
| 4.1                        | The Intended Completion period is 60 calendar days from date of signing of contract.                                                                             |
| 31.1                       | The minimum qualify score in technical proposal is 70 points; as described in IB/ITB                                                                             |
| 39                         | Tender fee of PKR 3000/- should be attached with tender documents in form of bank draft/pay order in favor of “National Center of Robotics and Automation-NUST”. |
| <b>Bidding Documents</b>   |                                                                                                                                                                  |
| 11.1                       | The clarification has to be made over EPADS only                                                                                                                 |
| 11.1                       | All questions in regard to that tender please send in written no later than 5 days before the closing date of the tender.                                        |
| <b>Preparation of Bids</b> |                                                                                                                                                                  |
| 13.1                       | The language of the bid shall be English.                                                                                                                        |
| 14.1                       | Any additional materials required to completed and submitted by the Bidders are: None                                                                            |
| 16.1                       | The Bid prices shall be quoted in Pakistani Rupees (PKR)                                                                                                         |
| 17.1                       | The bid shall be valid for 90 days                                                                                                                               |

|                           |                                                                                                                                                                                                                                                                        |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 18.1                      | Bid shall include a Bid Security issued by a bank acceptable to the employer (bank guarantee) included Security Form.                                                                                                                                                  |
| 18.2                      | The Bid Security will be 3% of Bid Value.                                                                                                                                                                                                                              |
| 20.1                      | Alternative Bids shall not be considered.                                                                                                                                                                                                                              |
| <b>Submission of Bids</b> |                                                                                                                                                                                                                                                                        |
| 21.1                      | Bid shall be submitted over EPAD only and bid guarantee/tender fee over NCRA address                                                                                                                                                                                   |
| 21.1                      | The Employer's address for the purpose of <b>req. documents submission</b> is:<br>Procurement Officer<br>National Centre of Robotics & Automation (NCRA)<br>Address: E&ME College, Peshawar Road, Rawalpindi, Pakistan.<br>Contact: 0092-345-9122273                   |
| 21.3                      | Name and code of the project has given in ITB.<br>Supply of Electrical & Mechanical Consumables<br>Procurement Ref: NUST/EME/NCRA-2026-249                                                                                                                             |
| 22.1                      | The closing date for submission of bid is:<br>Date: 26th February 2026, 1100h (Pakistan local time).                                                                                                                                                                   |
| 23.1                      | Late bids shall be rejected.                                                                                                                                                                                                                                           |
| <b>Bid Opening</b>        |                                                                                                                                                                                                                                                                        |
| 25.1                      | The Technical bid and financial bid opening will take place at:<br>NCRA, E&ME College, Peshawar Road, Rawalpindi, Pakistan.<br>Date: 26th February 2026, 1130h (Pakistan local time)                                                                                   |
| <b>Evaluation of Bids</b> |                                                                                                                                                                                                                                                                        |
| 31                        | Technical Evaluation: Bids shall be evaluated in accordance with the given technical criteria in ITB                                                                                                                                                                   |
| 32                        | The financial evaluation shall be executed according to the given criteria in ITB                                                                                                                                                                                      |
| <b>Award of Contract</b>  |                                                                                                                                                                                                                                                                        |
| 33.1                      | Standard Form and amount of Performance Bond acceptable the Employer shall be a Bank Guarantee.<br>The successful bidder shall furnish to the Employer a Performance Bond in the form with the amount of 5% value of the contract valid for the entire working period. |

## General Conditions

### Conflict of Interest:

A firm participating in the procurement process shall not have conflict of interest. Any firm found to have a conflict of interest shall be ineligible for an award of contract. If there is any personal relationship between the bidder and the donor or contracting authority, this must be stated as this might result in an exclusion of the bidder.

### Fairness and Transparency:

All interested bidders who take part in procurement for the works financed by NCRA-NUST must ensure a fair and transparent competition and to fulfill at least the International Labor Organization's (ILO) key norms which are ratified by the Government of Pakistan. These must be documented by signing a Declaration of undertaking in compliance with the specimen provided in Annex-3. If the

Declaration of undertaking is not provided by the interested bidder, the bidder will be excluded from the tender process.

#### **Penalties:**

- a. The Company reserves the right to forfeit the guarantee money, in case the successful bidder regrets or fail to complete the supplies/services within the specified and agreed time.

#### **Mode of Payments:**

All the payments to supplier, will be made through the proper banking channels. The payment to the supplier will be made on the criteria mentioned as:

Completion of 100% work (Lot Wise).

#### **Taxes, Insurance, Retention and other Costs**

- a. The quoted rates must be inclusive of all type of government taxes as of the financial offer available formats, in case of exemption the contractor should have to provide the valid exemption certificate as per govt. rules prevailing in the country.
- b. The quoted rates must be inclusive of transportation, carriage, handling and all other costs.
- c. The contracting authority will withheld the performance security till completion of 100% supplies/services and handing over of the agreed goods/services to the contracting authority in perfect useable condition.

#### **Settlement of Disputes**

- a. The Parties shall use their best efforts to settle amicably any dispute, controversy or claim arising out of, or relating to this Contract or the breach, termination or invalidity thereof.
- b. Where the parties wish to seek such an amicable settlement through conciliation, the conciliation shall take place in accordance with the Reconciliation Rules then obtaining, or according to such other procedure as may be agreed between the parties.
- c. On the behalf of NCRA College of E&ME, Comdt will be the competent authority for the settlement of any dispute.

#### **Ethics clauses**

- Any attempt by an contractor to obtain confidential information, enter into unlawful agreements with competitors or influence the Evaluation Committee or the Contracting Authority during the process of examining, clarifying, evaluating and comparing offers will lead to the rejection of its offer and may result in administrative penalties.
- The contractor must not be affected by any conflict of interest and shall have no equivalent relation in that respect with other contractors or parties involved in the project.
- The NCRA reserves the right to suspend or cancel project financing if corrupt practices of any kind are discovered at any stage of the award process or during the execution of a contract and if the Contracting Authority fails to take all appropriate measures to remedy the situation. For the purposes of this provision, "corrupt practices" are the offer of a bribe, gift, gratuity or commission to any person as an inducement or reward for performing or refraining from any act relating to the award of a contract or execution of a contract already concluded with the Contracting Authority.

- Offers will be rejected or contracts terminated if it emerges that the award or execution of a contract has given rise to unusual commercial expenses. Such unusual commercial expenses are commissions not mentioned in the main contract or not stemming from a properly concluded contract referring to the main contract, commissions not paid in return for any actual and legitimate service, commissions remitted to a tax haven, commissions paid to a payee who is not clearly identified or commissions paid to a company which has every appearance of being a front company.
- The Contracting Authority reserves the right to suspend or cancel the procedure, where the award procedure proves to have been subject to substantial errors, irregularities or fraud. Where such substantial errors, irregularities or fraud are discovered after the award of the Contract, the Contracting Authority may refrain from concluding the Contract.

### **Child Labour**

- The contractor represents and warrants that neither it, nor any of its suppliers is engaged in any practice inconsistent with the rights set forth in the Convention on the Rights of the Child, including Article 32 thereof, which, inter alia, requires that a child shall be protected from performing any work that is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical mental, spiritual, moral or social development.
- Any breach of this representation and warranty shall entitle NCRA procuring committee to terminate this Contract immediately upon notice to the Contractors, at no cost to NCRA.
- Any breach of this representation and warranty shall entitle NCRA procurement committee to terminate this Contract immediately upon notice to the Contractors, without any liability for termination charges or any other liability of any kind on NCRA.

### **Observance Of The Law**

The Contractors shall comply with all laws, ordinances, rules, and regulations bearing upon the performance of its obligations under the terms of this Contract.

### **Authority to Modify**

No modification or change in this Contract, no waiver of any of its provisions or any additional contractual relationship of any kind with the Contractors shall be valid and enforceable against contracting authority unless provided by an amendment to this Contract signed by the authorized official of contracting authority.

In no event shall the contracting authority be liable for any damages whatsoever including, without limitation, damages for loss or profits, in any way connected with the cancellation of a tender procedure even if the contracting authority has been advised of the possibility of damages.

---

Please only sign the document as confirmation to your agreement to above terms and conditions. If you disagree to any of the above mentioned clause, kindly negotiate them prior to signing agreement. Upon signing the document all terms become legally binding.

|                        |  |
|------------------------|--|
| <b>Name:</b>           |  |
| <b>Designation:</b>    |  |
| <b>Signature:</b>      |  |
| <b>Official Stamp:</b> |  |
| <b>Date:</b>           |  |

# TENDER FORM

Annex 2

Contractor stamp

**Project Name :** Supply of Electrical & Mechanical Consumables  
**Tenderer Name:** E&ME College, NUST  
**Department Name:** National Centre of Robotics and Automation (NCRA)  
**Procurement Number:** NUST/EME/NCRA-2026-249

To: President Local Purchase Committee  
NCRA, College of E&ME, Peshawar Road

Dear Sir,

1. Having examined the Conditions of Contract, Scope of Work, Specifications, and all other documents received with the Invitation to Tender for the execution of the services in connection with the above-named Project, we, the undersigned offer to execute and complete such services and remedy any faults and defects therein in conformity with the conditions spelled out in the afore-mentioned documents for the sum of as mentioned in Price Proposal. or such other sums as may be ascertained in accordance with the said conditions.
2. We acknowledge that the specimen of contract for " Supply of Electrical & Mechanical Consumables" part of our Tender.
3. We undertake, if our Tender is accepted, to commence the services within the time required in the contract conditions, and to complete the whole of the works comprised in the contract within the time stated in the Contract Conditions.
4. We agree to abide by this Tender for the period of 90 days from the submission/opening date stated in the Invitation to Tender and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
5. Unless and until a Contract Agreement is signed, this Tender, together with your written acceptance thereof, shall constitute a binding contract between us.
6. We understand that you are not bound to accept the lowest or any Tender you may receive. We understand and agree that the decision of the procurement / evaluating committee shall be final and cannot be challenged on any ground at any forum and the procurement / evaluating committee will not be liable for any loss or damage to any party acting in reliance thereon

Dated this : ..... day of .....

Signature : ..... in the capacity of .....

duly authorized to sign Tenders for and on behalf of

.....

.....

(Contractors name and address in block capitals)

**Declaration of Undertaking**

**Project Name :** Supply of Electrical & Mechanical Consumables  
**Tenderer Name:** E&ME College, NUST  
**Department Name:** National Centre of Robotics and Automation (NCRA)  
**Procurement Number:** NUST/EME/NCRA-2026-249

We underscore the importance of a free, fair and competitive procurement process that precludes fraudulent use. In this respect we have neither offered nor granted, directly or indirectly, any inadmissible advantages to any public servants or other persons in connection with our bid, nor will we offer or grant any such incentives or conditions in the present procurement process or, in the event that we are awarded the contract, in the subsequent execution of the contract.

We also underscore the importance of adhering to minimum social standards ("Core Labour Standards") in the implementation of the project. We undertake to comply with the Core Labour Standards ratified by the Islamic Republic of Pakistan.

We will inform our staff about their respective obligations and about their obligation to fulfil this declaration of undertaking and to obey the laws of the country of Pakistan.

We also declare that our company/all members of the consortium has/have not been included in any list of sanctions and affirm that our company/all members of the consortium will immediately inform the client if this situation should occur at a later stage.

We acknowledge that, in the event that our company (or a member of the consortium) is added to a list of sanctions that is legally binding upon the client, the client is entitled to exclude our company/the consortium from the procurement procedure and, if the contract is awarded to our company/the consortium, to terminate the contract immediately if the statements made in the Declaration of Undertaking were objectively false or the reason for exclusion occurs after the Declaration of Undertaking has been issued.

(Place) ....., this ..... day of .....

Name of company .....

Signature (s) .....

# TECHNICAL OFFER FORM

## (Supply of Electrical & Mechanical Consumables)

Company Profile must be filled in by Company's Owner or Legal Representative. This form must be duly filled as per required information.

Please attach the evidence documents which proves the declared figures in Technical Offer Form

| 1 Bidder's Profile                                     |                             |                                                |                             |                                   |         |
|--------------------------------------------------------|-----------------------------|------------------------------------------------|-----------------------------|-----------------------------------|---------|
| NAME OF COMPANY                                        |                             |                                                |                             |                                   |         |
| ABBREVIATION                                           |                             |                                                |                             |                                   |         |
| TYPE OF COMPANY<br>( √ or X )                          | Public Limited Co           | Private Limited Co                             | AOP                         | Others                            |         |
| IF OTHER SPECIFY                                       |                             |                                                |                             |                                   |         |
| COMPANY REGISTRATION No                                |                             |                                                |                             |                                   |         |
| PLACE OF REGISTRATION                                  |                             |                                                |                             |                                   |         |
| DATE OF REGISTRATION                                   |                             |                                                |                             |                                   |         |
| NTN Registration Yes <input type="checkbox"/>          | No <input type="checkbox"/> | STRN Registration Yes <input type="checkbox"/> | No <input type="checkbox"/> |                                   |         |
| NTN Registration #                                     |                             |                                                | STRN Registration #         |                                   |         |
| Company's affiliations for professional certifications |                             |                                                |                             |                                   |         |
|                                                        | Organization Name           | Certification                                  | Ranking                     | Validity Period                   | Remarks |
| 1                                                      |                             |                                                |                             |                                   |         |
| 2                                                      |                             |                                                |                             |                                   |         |
| 3                                                      |                             |                                                |                             |                                   |         |
| 4                                                      |                             |                                                |                             |                                   |         |
| COMPANY ADDRESS                                        | HEAD OFFICE                 |                                                |                             | BRANCH OFFICE NEAREST TO PAKISTAN |         |
|                                                        |                             |                                                |                             |                                   |         |
| POST CODE                                              |                             |                                                |                             |                                   |         |
| P.O. BOX                                               |                             |                                                |                             |                                   |         |
| TOWN/ CITY                                             |                             |                                                |                             |                                   |         |
| COUNTRY                                                |                             |                                                |                             |                                   |         |
| PHONE No                                               |                             |                                                |                             |                                   |         |
| FAX No                                                 |                             |                                                |                             |                                   |         |
| E-MAIL                                                 |                             |                                                |                             |                                   |         |

| Company Legal Authorized Representative for this Tender: |                                         |                          |          |               |
|----------------------------------------------------------|-----------------------------------------|--------------------------|----------|---------------|
| Complete Name/                                           |                                         |                          |          |               |
| Nationality:                                             |                                         | Position in the Company: |          |               |
| Official Address                                         |                                         |                          |          |               |
| Post Code                                                |                                         |                          |          |               |
| Town/City                                                |                                         |                          |          |               |
| Country                                                  |                                         |                          |          |               |
| Phone No.                                                |                                         |                          |          |               |
| E-Mail                                                   |                                         |                          |          |               |
| Full Name of 3 Key Representatives of Company:           | Signature:<br>Authorized Representative |                          |          |               |
|                                                          | Name                                    | Position                 | Location | Mobile Number |
|                                                          |                                         |                          |          |               |
|                                                          |                                         |                          |          |               |

| 2 Bidder's Bank Accounts Details |        |        |        |
|----------------------------------|--------|--------|--------|
|                                  | Bank 1 | Bank 2 | Bank 3 |
| BANK NAME                        |        |        |        |
| BRANCH ADDRESS                   |        |        |        |
| TOWN/CITY                        |        |        |        |
| POSTCODE                         |        |        |        |
| COUNTRY                          |        |        |        |
| BANK TELEPHONE No                |        |        |        |
| BANK FAX No                      |        |        |        |
| BANK E.MAIL                      |        |        |        |
| BANK ACCOUNT TITLE               |        |        |        |
| ACCOUNT NUMBER                   |        |        |        |
| IBAN                             |        |        |        |

**3. Bidder's Business Turnover Details: 3 Years (Please attach the evidence documents)**

|                     | PKR | \$ | Remarks |
|---------------------|-----|----|---------|
| July 23 – June 24   |     |    |         |
| July 24 – June 25   |     |    |         |
| July 25 – till Date |     |    |         |

**4. Offered Period of Completion for the Project. (In Calendar Days)**

|  |
|--|
|  |
|--|

**NOTE: This is mandatory to attach detail work plan, in accordance to the offer period of completion.**

**5. Past Experience: Please attach the evidence documents)**

*Please list contracts awarded to your company since July 2021 up to now (Relevant Projects)*

| Project Description | Project Starting Date | Project Completion Date | Name of Contracting Authority | Duration | Contact Value (PKR) |
|---------------------|-----------------------|-------------------------|-------------------------------|----------|---------------------|
|                     |                       |                         |                               |          |                     |
|                     |                       |                         |                               |          |                     |
|                     |                       |                         |                               |          |                     |
|                     |                       |                         |                               |          |                     |
|                     |                       |                         |                               |          |                     |
|                     |                       |                         |                               |          |                     |
|                     |                       |                         |                               |          |                     |
|                     |                       |                         |                               |          |                     |
|                     |                       |                         |                               |          |                     |

**Note: For more details please attach separate sheet**

I undersigned, certify that I am the designated legal representative of this Company, the information provided above is correct and I am aware of the fact that I will be held responsible for providing false information. I declare and certify that the information above is true and accurate to the best of my knowledge.

I understand and accept any false or inaccurate information may result in the cancellation of bid, even if discovered later.

Note: The incomplete technical form will subject to the disqualification from the tender process. Each portion of the technical bid form needs to be filled properly with accurate information as required and supporting documents/ profile should be attached for the verification of the information shared in the technical bids form.

Name:

---

Signature & Stamp:

Position:

Date: DD MM YY



ANNEX - 5

**National Center of Robotics and Automation (NCRA)  
(E&ME College, NUST)**

**TECHNICAL SPECIFICATION**

**PROJECT:**  
Supply of Electrical & Mechanical Consumables

**Procurement Number**  
NUST/EME/NCRA-2026-249



**TENDER DOCUMENT Annex 5  
(Technical Specification)**

**1. GENERAL REQUIREMENTS**

**1.1 General Technical Requirements**

The General Specification provided below shall be read in conjunction with the following documents for the respective contract:

- Instruction to bidders

**2. SUMMARY OF WORK**

**General:**

The project is consisting supply of consumables in NCRA, college of E&ME, Peshawar Road, Rawalpindi, Pakistan.

Overall, the project includes; Supply of Electrical & Mechanical Consumables.

The awarded company will have to provide equipment with its all-related activities according to the technical specification mentioned below;

| <b>Lot # 1: Mechanical Consumables</b> |                                       |                                                                                                                                              |                              |
|----------------------------------------|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| <b>Sr #</b>                            | <b>Item</b>                           | <b>Required Specifications</b>                                                                                                               | <b>Quoted Specifications</b> |
| 1                                      | Bolt 1                                | M3*12mm                                                                                                                                      |                              |
| 2                                      | Bolt 2                                | M3*15mm                                                                                                                                      |                              |
| 3                                      | Bolt 3                                | M3*25mm                                                                                                                                      |                              |
| 4                                      | Bolt 4                                | M3*40mm                                                                                                                                      |                              |
| 5                                      | Bolt 5                                | M2.5*12mm                                                                                                                                    |                              |
| 6                                      | Bolt 6                                | M4*10mm                                                                                                                                      |                              |
| 7                                      | Nut                                   | M3                                                                                                                                           |                              |
| 8                                      | Nut (Nylock)                          | M3                                                                                                                                           |                              |
| 9                                      | Spacers                               | M3x40mm                                                                                                                                      |                              |
| 10                                     | Washers                               | M3                                                                                                                                           |                              |
| 11                                     | M3 Aluminium Rod End Ball Joint       | M3 , threaded                                                                                                                                |                              |
| 12                                     | RC Bar Linkage                        | Linkage Rod M3<br>Double Thread Link<br>45mm                                                                                                 |                              |
| 13                                     | RC Bar Linkage                        | Linkage Rod M3<br>Double Thread Link 100mm                                                                                                   |                              |
| 14                                     | Servo Arm                             | 25T , Lenght: 35.5mm                                                                                                                         |                              |
| 15                                     | Small Disc 25T Standard Steering Gear | Mounting hole spacing: 14mm<br>Diameter: 20mm<br>Spend toothed aperture 5.5mm<br>Flower tooth number of 25mm<br>4 x M3 tapped mounting holes |                              |

|    |                                                     |                                                                                                                                                                                                                                                                                                     |  |
|----|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 16 | M3 Brass Inserts                                    | (Height x External Dia):<br>M3(4×4.5 mm)<br>Material: Brass<br>Fastener Type: Insert<br>Exterior Finish: Brass                                                                                                                                                                                      |  |
| 17 | M4 Brass Inserts                                    | (Height x External Dia):<br>M4(8×6mm)<br>Material: Brass<br>Fastener Type: Insert<br>Exterior Finish: Brass                                                                                                                                                                                         |  |
| 18 | Aluminium Sheets T6061                              | Thickness: 2mm<br>Size: 2ft x 4ft                                                                                                                                                                                                                                                                   |  |
| 19 | Aluminium Sheets T6061                              | Thickness: 1.5mm<br>Size: 1.5ft x 1.5ft                                                                                                                                                                                                                                                             |  |
| 20 | Mecanum Wheels                                      | <b>2 Right Wheels and 2 left Wheels</b><br>Size: 52mm<br>Outer diameter: 51.8mm<br>Thickness: 24.9mm<br>Hexagonal hole: 6mm                                                                                                                                                                         |  |
| 21 | Mecanum Wheels                                      | <b>4 Right wheels and 4 left Wheels</b><br>Wheel Diameter: 60mm<br>Wheel Thickness: 30.62mm<br>Number of Rollers: 9<br>Angle: 45°<br>Load Capacity: 15kg<br>Color: black<br>Material: plastic + silicone rubber<br>Motor Shaft Coupling<br>Diameter: 6.71mm<br>Motor Shaft Coupling Length: 27.28mm |  |
| 22 | Manufacturing : Laser Cutting & sheet metal bending | Manufacturing as per design requirements,<br>Can Visit NCRA to view design,<br>Design Files will be shared with winning bidder                                                                                                                                                                      |  |
| 23 | Manufacturing: 3D Printing                          | Manufacturing as per design requirements,<br>Can Visit NCRA to view design,<br>Design Files will be shared with winning bidder                                                                                                                                                                      |  |

**Lot # 2, Electrical Consumables**

| Sr # | Item | Required Specifications | Quoted Specifications |
|------|------|-------------------------|-----------------------|
|------|------|-------------------------|-----------------------|

|   |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |
|---|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1 | Servo Motor SPT 5435LV-180W or equivalent | <p>Motor: Core    Potentiometer: Mechanics<br/>         Neutral point: 1500us   <br/>         Voltage Range: 4.8V/6.OV<br/>         PWM Voltage 3.3V/5V   <br/>         Signal Frequency: 330Hz<br/>         Feedback Angle: No   <br/>         Operating temperature: -10C - 50C<br/>         Cycle: 20ms    Dead Band: 4us<br/>         Default Direction: CCW   <br/>         Yes/no lock: Lock<br/>         Remote Control Angle: 90 Degree  500-2500us Angle: 180/ PWM<br/>         Quiescent Current: 100mAh   <br/>         Rated current: 1.4A<br/>         Blocking Current: 3.5A   <br/>         Weight / Dimensions: 60g / 40.5*20*40.5mm<br/>         Output Gear: Futaba 25T   <br/>         Gear Material: All metal gear<br/>         Shell Material: Half Aluminum Shell    Bearing: 2BB<br/>         Connector Wire Length: 260mm    line definition: Brown-/Red+/Orange s<br/>         Operating Speed: 4.8V/0.16"/60 deg, 6.0V/0.14"/60 deg<br/>         Stall Torque: 4.8V/29 kg.cm, 6.0V/35kg.cm</p> |  |
| 2 | TT Metal Gear DC Motor 6V                 | <p>TT motor robot metal gear motor operating voltage: 3V-6V DC, Output: 110 RPM<br/>         Deceleration ratio 1: 90, single shaft<br/>         All metal gear, blue plastic motor case<br/>         The microcontroller without interference, anti-interference ability.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
| 3 | ESP32 Wemos Lolin                         | <p>Microcontroller: ESP-WROOM-32<br/>         Operating Voltage: 3.3V<br/>         Input Voltage: 5V via USB or 3.7V LiPo battery<br/>         WiFi: 802.11 b/g/n<br/>         Bluetooth: v4.2 BR/EDR and BLE<br/>         Weight: 9 grams</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |



|   |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
|---|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 4 | TB6612FNG DC Motor Driver       | <p>Power supply voltage:<br/>VM=15V max, VCC=2.7-5.5V</p> <p>Output current:<br/>Iout=1.2A(average) / 3.2A (peak)</p> <p>Standby control to save power<br/>CW/CCW/short brake/stop motor control modes</p> <p>Built-in thermal shutdown circuit and low voltage detecting circuit</p> <p>All pins of the TB6612FNG broken out to 0.1" spaced pins</p> <p>Filtering capacitors on both supply lines</p> <p>Size: 2x2cm(approx)</p> |  |
| 5 | PCA9685 16 Channel Servo Driver | <p>Adjustable frequency PWM up to about 1.6 KHz</p> <p>Configurable push-pull or open-drain output</p> <p>Output enable pin to quickly disable all the outputs</p> <p>12-bit resolution for each output – for servos, that means about 4us resolution at 60Hz update rate</p> <p>6 address select pins so you can wire up to 62 of these on a single i2c bus, a total of 992 outputs – that’s a lot of servos or LEDs</p>         |  |

|   |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
|---|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 6 | XL4015 Buck Converter   | <p>Module Nature: Non-isolated buck module (BUCK)<br/>         Input voltage: 4-38V (input should try not to exceed 38V)<br/>         Output voltage: 1.25-36V continuously adjustable<br/>         Output current: 0-5A<br/>         Output power: 75W<br/>         Operating temperature: -40 ~ +85 degrees<br/>         Operating frequency: 180KHz<br/>         Conversion efficiency: up to 96%<br/>         Load regulation: <math>S(I) \leq 0.8\%</math> (input 24V, output 12V, load from 1 ~ 4.5A when measured)<br/>         Voltage regulation: <math>S(u) \leq 0.8\%</math> (output 12V, 4A, the voltage measured from 18 to 32V)<br/>         Power indicator: Yes<br/>         Short circuit protection: Yes (limit current 8A)<br/>         Over-temperature protection: Yes (over-temperature automatically turn off the output)<br/>         Input Reverse Protection: None, (if required, enter the high-current diode in the input string)<br/>         Installation: 2 3mm screws<br/>         Wiring method: welding, V-IN for the input, V-OUT for the output.<br/>         L x W x H : 54 x 23 x 18mm</p> |  |
| 7 | SR-04 Ultrasonic sensor | <p>Input Voltage: 5V<br/>         Working Current: 15mA<br/>         Standby current: less than 2mA<br/>         Working Frequency: 40KHz<br/>         Induction Angle: <math>&lt;15^\circ</math><br/>         Distance Range: 2cm ~ 400cm<br/>         Resolution : 1cm<br/>         Trigger Input Pulse Width: 10uS<br/>         Pin Number: 4 Pin<br/>         Interface: TTL<br/>         Compatible with Arduino<br/>         Size: 45mm x 20mm x 15mm</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |



|    |                                                       |                                                                                                                                                                                                                                                                                   |  |
|----|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 8  | TCRT5000 Sensor Module                                | 5-way reflective optical sensors mounted in line (TCRT5000 or equivalent)<br>On-board hex inverter provide clean digital output<br>Sensitive to dark color and infrared<br>Operating Voltage : 5 V (recommended)<br>Comes with M3 flexible mounting slot                          |  |
| 9  | USB Microphone                                        | Sensitivity: -67 dBV/pBar, -47 dBV/Pascal +/-4dB<br>Frequency Response: 100-16kHz<br>Working voltage: 4.5V<br>Size: 2cm x 2cm x 0.5cm<br>Color: Black.                                                                                                                            |  |
| 10 | Buffer Speaker 8 ohm 1 watt                           | impedance: 8ohms    Power rating: 1 W    dia: 1-3in<br>buffer                                                                                                                                                                                                                     |  |
| 11 | MAX9814 Auto Gain Control Stable Microphone Amplifier | Supply Voltage: 2.7v-5.5v @ 3mA current<br>Output: 2Vpp on 1.25V bias<br>Frequency Response: 20Hz – 20KHz<br>Programmable Attack and Release Ratio<br>Automatic gain, selectable max from 40dB, 50dB or 60dB<br>Low Input-Referred Noise Density of 30nV/<br>Low THD: 0.04% (typ) |  |

|    |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
|----|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 12 | DFPlayer Mini MP3 Player Module     | <p>supports sampling rates (KHz): 8 / 11.025 / 12/16 / 22.05 / 24/32 / 44.1 / 48</p> <p>24-bit DAC output, support dynamic range: 90dB, SNR support: 85dB</p> <p>fully supports FAT16, FAT32 file system, maximum support 32G TF card, support U disk to 32G, 64M bytes</p> <p>NORFLASH</p> <p>a variety of control modes are available. IO control, serial port, AD button control mode radio spots language function, you can pause the background music being played.</p> <p>Advertising finished playing background sound continues to play back</p> <p>the audio data is sorted by folder, supports up to 100 folders, folders can be assigned to every 255 Tracks</p> <p>30 level adjustable volume, six adjustable EQ</p> |  |
| 13 | BNO 055 IMU                         | <p>Dimensions: 20mm x 27mm x 4mm / 0.8" x 1.1" x 0.2"</p> <p>Header holes begin 4mm from the mounting holes</p> <p>Mounting Hole dimensions: 20mm x 12mm apart</p> <p>Uses I2C address 0x28 (default) or 0x29</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |
| 14 | Andriod Tablet Lenovo or Equivalent | <p>Brand: Lenovo</p> <p>Docomo D-42A</p> <p>8.0 inches TFT LCD Display</p> <p>4GB Ram</p> <p>64GB Storage</p> <p>Operating System: Android 10</p> <p>CPU: Snapdragon 665</p> <p>2.0GHz + 1.8GHz Octa Core</p> <p>Main Camera: 8MP</p> <p>Front Camera: 2MP</p> <p>WIFI</p> <p>Bluetooth</p> <p>Battery Capacity: 5000 mah</p>                                                                                                                                                                                                                                                                                                                                                                                                    |  |



|    |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
|----|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 15 | OAK d lite stereo camera             | <p>RVC2 architecture on-board features:<br/>         4 TOPS of processing power (1.4 TOPS for AI - RVC2 NN Performance)<br/>         Run any AI model, even custom architected/built ones (models need to be converted)<br/>         Encoding: H.264, H.265, MJPEG - 4K/30FPS, 1080P/60FPS<br/>         Computer vision: warp (undistortion), resize, crop via ImageManip node, edge detection, feature tracking. You can also run custom CV functions<br/>         Stereo depth perception with filtering, post-processing, RGB-depth alignment, and high configurability<br/>         Object tracking: 2D and 3D tracking with ObjectTracker node<br/>         Base line: 75 mm<br/>         Ideal depth range: 40cm - 8m. See technical specifications.<br/>         Power consumption: Up to 5W. See technical specifications<br/>         Industrial grade aluminum housing with Front Gorilla Glass<br/>         1/4" tripod mount and 75mm M4 Vesa mount<br/>         Dimensions: 91x28x17.5 mm<br/>         Weight: 61g</p> |  |
| 16 | Oak d lite stereo camera usb 3 cable | <p>The USB 3.0 AM/CM SuperSpeed cable of 3ft/1m, tested, validated, and sourced by Luxonis</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |



|    |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |
|----|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 17 | Nvidia Jetson Nano | GPU: 128-core Maxwell<br>CPU: Quad-core ARM A57 @ 1.43 GHz<br>Memory: 4 GB 64-bit LPDDR4 25.6 GB/s<br>Storage: microSD (not included)<br>Video Encoder: 4K @ 30   4x 1080p @ 30   9x 720p @ 30 (H.264/H.265)<br>Video Decoder: 4K @ 60   2x 4K @ 30   8x 1080p @ 30   18x 720p @ 30 (H.264/H.265)<br>Camera: 2x MIPI CSI-2 DPHY lanes<br>Connectivity: Gigabit Ethernet, M.2 Key E<br>Display: HDMI 2.0 and eDP 1.4<br>USB: 4x USB 3.0, USB 2.0 Micro-B<br>Others: GPIO, I2C, I2S, SPI, UART<br>Mechanical: 100 mm x 80 mm x 29 mm |  |
|----|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

|    |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
|----|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 18 | Raspberry pi 5 16gb | <p>Processor: Quad-core ARM Cortex-A76, capable of high performance for computing tasks.</p> <p>Memory: 16GB LPDDR4x RAM, ensuring smooth operation and the ability to handle complex workloads.</p> <p>Graphics: Dual 4K display output via micro-HDMI ports, supporting a rich visual experience.</p> <p>Connectivity:</p> <p>USB Ports: 2x USB 3.0 and 2x USB 2.0 ports for fast data transfer and peripheral connectivity.</p> <p>Networking: Gigabit Ethernet and dual-band 802.11ac Wi-Fi for robust and flexible network connections.</p> <p>Bluetooth: Bluetooth 5.0 for connecting to various devices and accessories.</p> <p>Storage: MicroSD card slot for easy and expandable storage options.</p> <p>Power: 5V USB-C power input, ensuring efficient power delivery and compatibility with a wide range of power supplies.</p> <p>GPIO: 40-pin GPIO header for interfacing with sensors, actuators, and other hardware.</p> |  |
| 19 | Pi cam v1.3         | <p>5MP Omnivision 5647 Camera Module</p> <p>Still Picture Resolution: 2592 x 1944</p> <p>Video: Supports 1080p @ 30fps, 720p @ 60fps and 640x480p 60/90 Recording</p> <p>15-pin MIPI Camera Serial Interface – Plugs Directly into the Raspberry Pi Board</p> <p>Size: 20 x 25 x 9mm</p> <p>Weight 3g</p> <p>Fully Compatible with many Raspberry Pi cases</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |



|    |                    |                                                                                                                                                                                                                                |  |
|----|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 20 | RP Lidar A1 2D     | Company: SLAMTEC<br>Part Number: A1M8-R6<br>Gross Weight: 0.001kg<br>Sensor Type: Proximity<br>Typical Input Voltage:<br>3.3VDC/ 5VDC<br>Operating Current: 600mA<br>Interface: Digital<br>Communication Protocol:<br>UART USB |  |
| 21 | Capacitor 1000uF   | 1000uf 25V Electrolytic<br>Capacitor<br>1000uF Aluminium<br>Electrolytic Capacitor<br>Polarized<br>Voltage Rating = 25 VDC<br>Tolerance = 20%<br>Size: 10×20 mm<br>Lead/Terminal Type = Radial                                 |  |
| 22 | Capacitor 470uF    | 470uF Aluminium Electrolytic<br>Capacitor<br>Polarized<br>Voltage Rating = 16 VDC<br>Tolerance = 20%<br>Size: 8×11 mm<br>Lead/Terminal Type = Radial                                                                           |  |
| 23 | Resistor 10k ohm   | 1% through hole Resistor<br>1/4 Watt<br>0.25 Watt                                                                                                                                                                              |  |
| 24 | Resistor 1k ohm    | 5% through hole Resistor<br>1/4 Watt<br>0.25 Watt                                                                                                                                                                              |  |
| 25 | Transistor IRF540n | Drain-Source Volt (Vds):<br>100V<br>Drain-Gate Volt (Vdg): 100V<br>Gate-Source Volt (Vgs): 20V<br>Drain Current (Id): 30A<br>Power Dissipation (Ptot):<br>150W<br>Type: N-Channel                                              |  |

|    |                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |
|----|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 26 | 5mm Pitch 2 Pin Pcb Screw Terminal Block Connector | <p>Pitch: 5.0mm<br/> Poles: 2P<br/> Screw: M2.5/ Steel/ Zinc plated or Brass<br/> Wire cage: Steel Zinc plated or Brass Ni plated<br/> Pin header: Brass/ Tin Plated<br/> Rated voltage: 300V<br/> Rated current: 10A<br/> Withstanding voltage: AC2000V/1 Min<br/> Wire range: 22-12 AWG<br/> Temperature range: -40°C - +105°C<br/> MAX soldering: +250°C for 5 sec.<br/> Torque: 0.4 Nm (3.5 lb. in)<br/> Strip length: 6-7mm</p> |  |
| 27 | Kcd-107 Spst Round Rocker Switch Button            | <p>Type: On/OFF (SPST)<br/> Terminals: 2 Terminals<br/> Voltage &amp; Current: 6A 250V AC(for resistive load only)<br/> 10A 125V AC(for resistive load only)<br/> Total Size(Each One): 23 x 29mm/ 0.9" x 1.1"(D*T)<br/> Mount Hole Diameter: 19mm / 0.75"<br/> Colour: Black<br/> Material: Plastic &amp; Metal</p>                                                                                                                 |  |
| 28 | Hard jumper wires black                            | <p>Pin to Pin configuration<br/> Available in minimum 1 meter (100cm) lengths and longer<br/> Individual cores or wires can be separated for multi-purpose use<br/> Each core in cable is individual separate color!<br/> 10 thin wires packaged in a spiral cable wrap</p>                                                                                                                                                          |  |
| 29 | Hard jumper wires white                            | <p>Pin to Pin configuration<br/> Available in minimum 1 meter (100cm) lengths and longer<br/> Individual cores or wires can be separated for multi-purpose use<br/> Each core in cable is individual separate color!<br/> 10 thin wires packaged in a spiral cable wrap</p>                                                                                                                                                          |  |

|    |                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
|----|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 30 | Solderable Wire Flexible Wires For Wiring Jumper Wire Wiring Wire , Wiring Cable Red   | Super flexible.<br>High Strand Count.<br>Pure silicone Insulation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| 31 | Solderable Wire Flexible Wires For Wiring Jumper Wire Wiring Wire , Wiring Cable black | Super flexible.<br>High Strand Count.<br>Pure silicone Insulation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| 32 | PS4 Remote Control                                                                     | <p>the DualShock 4 Wireless Controller features a built in speaker and stereo headset jack, putting several new audio options in the player's hands</p> <p>The Dualshock 4 wireless controller can be easily recharged by plugging it into your PlayStation 4 system, even when in rest mode, or with any standard charger using a USB cable (type A to micro B sold separately)</p> <p>Motion sensors - Rock and roll as a highly sensitive built-in accelerometer and gyroscope detect the motion, tilt and rotation of your DUALSHOCK 4 wireless controller</p> <p>DualShock 4 Wireless Controller PS4 and PC compatible. Item PS5 is compatible only when playing PS4 games</p> |  |
| 33 | Charger                                                                                | <p>Input: 100V - 240V AC, 50 - 60 Hz 0.5A</p> <p>Output Voltage: 9V DC</p> <p>Output Current: 1A</p> <p>Weight: 121g</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
| 34 | Battery 8.4V 3200mAh                                                                   | Lithium ion or lithium polymer cell battery pack                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |
| 35 | Battery 6V 3200mAh                                                                     | Lithium ion or lithium polymer cell battery pack                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |
| 36 | 3 Pin Jst Xh 2.5mm Side Entry Header Right Angle                                       | Jst Connectors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |
| 37 | 2 Pin JST-XH Male Right Angle 2515 Connector 2.54mm Pitch                              | Jst Connectors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |
| 38 | 2 Wires 2.54mm Pitch Female Jst Xh Connector Cable Wire                                | Jst Connectors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |

|    |                                                                             |                                                                                                                                                                                                                                                                                                                                                                           |  |
|----|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 39 | 3 Wires 2.54mm Pitch Female Jst Xh Connector Wire 6 Inch One Side Connector | Jst Connectors                                                                                                                                                                                                                                                                                                                                                            |  |
| 40 | Raspberry pi AI Hat + 2                                                     | <p>Hailo-10H AI accelerator delivering 40 TOPS (INT4) inferencing performance</p> <p>Performance for computer vision models comparable to the Raspberry Pi AI HAT+ (26 TOPS)</p> <p>Runs generative AI models efficiently using 8GB on-board RAM</p> <p>Fully integrated into Raspberry Pi's camera software stack</p> <p>Conforms to Raspberry Pi HAT+ specification</p> |  |
| 41 | Raspberry pi AI HAT + 2 heatsink,                                           | Heatsink                                                                                                                                                                                                                                                                                                                                                                  |  |
| 42 | Stacking header of Raspberry pi AI hat +2 with pi5                          | 16mm stacking header, spacers, and screws to enable fitting on Raspberry Pi 5 with Raspberry Pi Active Cooler in place                                                                                                                                                                                                                                                    |  |
| 43 | PCB Fabrication                                                             | 2 layer PCB<br>size = 80mm x 140mm<br>Double sided PTH                                                                                                                                                                                                                                                                                                                    |  |
| 44 | Active Cooler for Raspberry Pi 5                                            | The Active Cooler combines a large metal heatsink with a high-quality variable-speed blower fan, powered and controlled via the fan connector on the Raspberry Pi 5, attached to the board via sprung pins into the dedicated pair of mounting holes.                                                                                                                     |  |
| 45 | Black Color 6 Inch Cable Tie/ Zip Ties                                      | 6in<br>Black Color                                                                                                                                                                                                                                                                                                                                                        |  |
| 46 | White Nylon 200mm Cable Tie/zip tie                                         | 200mm<br>White Color                                                                                                                                                                                                                                                                                                                                                      |  |
| 47 | 4 Inch 100mm Pvc Cable Tie/ Zip Tie                                         | 100mm<br>White Color                                                                                                                                                                                                                                                                                                                                                      |  |
| 48 | Heat Shrinks Sleeve 1mm                                                     | 1mm wide                                                                                                                                                                                                                                                                                                                                                                  |  |
| 49 | Heat Shrinks Sleeve 2mm                                                     | 2mm wide                                                                                                                                                                                                                                                                                                                                                                  |  |



ANNEX - 5

|    |                         |          |  |
|----|-------------------------|----------|--|
| 50 | Heat Shrinks Sleeve 3mm | 3mm wide |  |
| 51 | Heat Shrinks Sleeve 6mm | 6mm wide |  |
| 52 | Heat Shrinks Sleeve 9mm | 9mm wide |  |

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Note:</b> | <ul style="list-style-type: none"> <li>• The technical drawings will be shared exclusively with the successful supplier upon signing a Non-Disclosure Agreement (NDA)</li> <li>• All equipment should of required brand or equivalent.</li> <li>• Delivery of all equipment/consumables will be at NCRA, College of E&amp;ME, NUST Rawalpindi</li> <li>• Samples may be called from winning vendor</li> <li>• One vendor can apply for one or more but complete lot(s)</li> <li>• Quantity may be increased or decreased depending upon quoted rates and availability of funds</li> <li>• All equipment should have one-year local warranty and consumables have one-month local warranty, (If international, Local supplier will be responsible for all claim expenses)</li> </ul> |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

I, the undersigned, certify that I am the duly authorized legal representative of this company and confirm our commitment to providing all the specified services at the highest quality standards.

**Name:** \_\_\_\_\_

**Signature & Stamp:** \_\_\_\_\_

**Position:** \_\_\_\_\_

**Date:** DD MM YY \_\_\_\_\_

# FINANCIAL OFFER

Contract Title: Supply of Electrical & Mechanical Consumables

Tender Reference: NUST/EME/NCRA-2026-249

Name of Tenderer:

## Lot # 1: Mechanical Consumables

| S # | Item Name                                           | Specification                     | UNIT    | Qty | Unit Rate | Amount |
|-----|-----------------------------------------------------|-----------------------------------|---------|-----|-----------|--------|
| 1   | Bolt 1                                              | As agreed and given in Annexure 5 | No.     | 200 |           | -      |
| 2   | Bolt 2                                              | As agreed and given in Annexure 5 | No.     | 200 |           | -      |
| 3   | Bolt 3                                              | As agreed and given in Annexure 5 | No.     | 150 |           | -      |
| 4   | Bolt 4                                              | As agreed and given in Annexure 5 | No.     | 150 |           | -      |
| 5   | Bolt 5                                              | As agreed and given in Annexure 5 | No.     | 150 |           | -      |
| 6   | Bolt 6                                              | As agreed and given in Annexure 5 | No.     | 200 |           | -      |
| 7   | Nut                                                 | As agreed and given in Annexure 5 | No.     | 200 |           | -      |
| 8   | Nut (Nylock)                                        | As agreed and given in Annexure 5 | No.     | 200 |           | -      |
| 9   | Spacers                                             | As agreed and given in Annexure 5 | No.     | 30  |           | -      |
| 10  | Washers                                             | As agreed and given in Annexure 5 | No.     | 200 |           | -      |
| 11  | M3 Aluminium Rod End Ball Joint                     | As agreed and given in Annexure 5 | No.     | 40  |           | -      |
| 12  | RC Bar Linkage                                      | As agreed and given in Annexure 5 | No.     | 40  |           | -      |
| 13  | RC Bar Linkage                                      | As agreed and given in Annexure 5 | No.     | 10  |           | -      |
| 14  | Servo Arm                                           | As agreed and given in Annexure 5 | No.     | 20  |           | -      |
| 15  | Small Disc 25T Standard Steering Gear               | As agreed and given in Annexure 5 | No.     | 40  |           | -      |
| 16  | M3 Brass Inserts                                    | As agreed and given in Annexure 5 | No.     | 150 |           | -      |
| 17  | M4 Brass Inserts                                    | As agreed and given in Annexure 5 | No.     | 150 |           | -      |
| 18  | Aluminium Sheets T6061                              | As agreed and given in Annexure 5 | No.     | 4   |           | -      |
| 19  | Aluminium Sheets T6061                              | As agreed and given in Annexure 5 | No.     | 4   |           | -      |
| 20  | Mecanum Wheels                                      | As agreed and given in Annexure 5 | No.     | 4   |           | -      |
| 21  | Mecanum Wheels                                      | As agreed and given in Annexure 5 | No.     | 8   |           | -      |
| 22  | Manufacturing : Laser Cutting & sheet metal bending | As agreed and given in Annexure 5 | Lum Sum | 1   |           | -      |
| 23  | Manufacturing: 3D Printing                          | As agreed and given in Annexure 5 | Lum Sum | 1   |           | -      |

Total Bid Amount (Without GST) -

Total GST @ 18% -

Total Bid Amount Inclusive of All Taxes -

Total Bid Amount in words (PKR)

|                                  |  |                                       |
|----------------------------------|--|---------------------------------------|
| Name (Tenderer's Representative) |  | Tenderer's Official Stamp & Signature |
| Designation:                     |  |                                       |
| Date:                            |  |                                       |

Note: The quoted rate will be valid for 90 days

All supplies & works to be completed on time as mentioned in Tender Documents'

All terms & conditions mentioned in "Tender Conditions" are accepted to our company

## FINANCIAL OFFER

Contract Title: Supply of Electrical & Mechanical Consumables

Tender Reference: NUST/EME/NCRA-2026-249

Name of Tenderer:

### Lot # 2: Electrical Consumables

| S # | Item Name                                             | Specification                     | UNIT  | Qty | Unit Rate | Amount |
|-----|-------------------------------------------------------|-----------------------------------|-------|-----|-----------|--------|
| 1   | Servo Motor SPT 5435LV-180W or equivalent             | As agreed and given in Annexure 5 | No.   | 24  |           | -      |
| 2   | TT Metal Gear DC Motor 6V                             | As agreed and given in Annexure 5 | No.   | 12  |           | -      |
| 3   | ESP32 Wemos Lolin                                     | As agreed and given in Annexure 5 | No.   | 5   |           | -      |
| 4   | TB6612FNG DC Motor Driver                             | As agreed and given in Annexure 5 | No.   | 10  |           | -      |
| 5   | PCA9685 16 Channel Servo Driver                       | As agreed and given in Annexure 5 | No.   | 4   |           | -      |
| 6   | XL4015 Buck Converter                                 | As agreed and given in Annexure 5 | No.   | 4   |           | -      |
| 7   | SR-04 Ultrasonic sensor                               | As agreed and given in Annexure 5 | No.   | 12  |           | -      |
| 8   | TCRT5000 Sensor Module                                | As agreed and given in Annexure 5 | No.   | 5   |           | -      |
| 9   | USB Microphone                                        | As agreed and given in Annexure 5 | No.   | 3   |           | -      |
| 10  | Buffer Speaker 8 ohm 1 watt                           | As agreed and given in Annexure 5 | No.   | 5   |           | -      |
| 11  | MAX9814 Auto Gain Control Stable Microphone Amplifier | As agreed and given in Annexure 5 | No.   | 5   |           | -      |
| 12  | DFPlayer Mini MP3 Player Module                       | As agreed and given in Annexure 5 | No.   | 5   |           | -      |
| 13  | BNO 055 IMU                                           | As agreed and given in Annexure 5 | No.   | 2   |           | -      |
| 14  | Andriod Tablet Lenovo or Equivalent                   | As agreed and given in Annexure 5 | No.   | 1   |           | -      |
| 15  | OAK d lite stereo camera                              | As agreed and given in Annexure 5 | No.   | 1   |           | -      |
| 16  | Oak d lite stereo camera usb 3 cable                  | As agreed and given in Annexure 5 | No.   | 2   |           | -      |
| 17  | Nvidia Jetson Nano                                    | As agreed and given in Annexure 5 | No.   | 1   |           | -      |
| 18  | Raspberry pi 5 16gb                                   | As agreed and given in Annexure 5 | No.   | 1   |           | -      |
| 19  | Pi cam v1.3                                           | As agreed and given in Annexure 5 | No.   | 1   |           | -      |
| 20  | RP Lidar A1 2D                                        | As agreed and given in Annexure 5 | No.   | 1   |           | -      |
| 21  | Capacitor 1000uF                                      | As agreed and given in Annexure 5 | No.   | 120 |           | -      |
| 22  | Capacitor 470uF                                       | As agreed and given in Annexure 5 | No.   | 120 |           | -      |
| 23  | Resistor 10k ohm                                      | As agreed and given in Annexure 5 | No.   | 120 |           | -      |
| 24  | Resistor 1k ohm                                       | As agreed and given in Annexure 5 | No.   | 120 |           | -      |
| 25  | Transistor IRF540n                                    | As agreed and given in Annexure 5 | No.   | 20  |           | -      |
| 26  | 5mm Pitch 2 Pin Pcb Screw Terminal Block Connector    | As agreed and given in Annexure 5 | No.   | 20  |           | -      |
| 27  | Kcd-107 Spst Round Rocker Switch Button               | As agreed and given in Annexure 5 | No.   | 20  |           | -      |
| 28  | Hard jumper wires black                               | As agreed and given in Annexure 5 | meter | 5   |           | -      |
| 29  | Hard jumper wires white                               | As agreed and given in Annexure 5 | meter | 5   |           | -      |
| 30  | Solderable Wire Flexible Wires For Wiring Jumper      | As agreed and given in Annexure 5 | meter | 5   |           | -      |
| 31  | Solderable Wire Flexible Wires For Wiring Jumper      | As agreed and given in Annexure 5 | meter | 5   |           | -      |
| 32  | PS4 Remote Control                                    | As agreed and given in Annexure 5 | No.   | 3   |           | -      |

|    |                                                                             |                                   |       |     |  |   |
|----|-----------------------------------------------------------------------------|-----------------------------------|-------|-----|--|---|
| 33 | Charger                                                                     | As agreed and given in Annexure 5 | No.   | 4   |  | - |
| 34 | Battery 8.4V 3200mAh                                                        | As agreed and given in Annexure 5 | No.   | 6   |  | - |
| 35 | Battery 6V 3200mAh                                                          | As agreed and given in Annexure 5 | No.   | 3   |  | - |
| 36 | 3 Pin Jst Xh 2.5mm Side Entry Header Right Angle                            | As agreed and given in Annexure 5 | No.   | 100 |  | - |
| 37 | 2 Pin JST-XH Male Right Angle 2515 Connector 2.54mm Pitch                   | As agreed and given in Annexure 5 | No.   | 50  |  | - |
| 38 | 2 Wires 2.54mm Pitch Female Jst Xh Connector Cable Wire                     | As agreed and given in Annexure 5 | No.   | 50  |  | - |
| 39 | 3 Wires 2.54mm Pitch Female Jst Xh Connector Wire 6 Inch One Side Connector | As agreed and given in Annexure 5 | No.   | 50  |  | - |
| 40 | Raspberry pi AI Hat + 2                                                     | As agreed and given in Annexure 5 | No.   | 1   |  | - |
| 41 | Raspberry pi AI HAT + 2 heatsink,                                           | As agreed and given in Annexure 5 | No.   | 1   |  | - |
| 42 | Stacking header of Raspberry pi AI hat +2 with pi5                          | As agreed and given in Annexure 5 | No.   | 1   |  | - |
| 43 | PCB Fabrication                                                             | As agreed and given in Annexure 5 | No.   | 4   |  | - |
| 44 | Active Cooler for Raspberry Pi 5                                            | As agreed and given in Annexure 5 | No.   | 2   |  | - |
| 45 | Black Color 6 Inch Cable Tie/ Zip Ties                                      | As agreed and given in Annexure 5 | No.   | 100 |  | - |
| 46 | White Nylon 200mm Cable Tie/zip tie                                         | As agreed and given in Annexure 5 | No.   | 100 |  | - |
| 47 | 4 Inch 100mm Pvc Cable Tie/ Zip Tie                                         | As agreed and given in Annexure 5 | No.   | 100 |  | - |
| 48 | Heat Shrinks Sleeve 1mm                                                     | As agreed and given in Annexure 5 | meter | 5   |  | - |
| 49 | Heat Shrinks Sleeve 2mm                                                     | As agreed and given in Annexure 5 | meter | 5   |  | - |
| 50 | Heat Shrinks Sleeve 3mm                                                     | As agreed and given in Annexure 5 | meter | 5   |  | - |
| 51 | Heat Shrinks Sleeve 6mm                                                     | As agreed and given in Annexure 5 | meter | 5   |  | - |
| 52 | Heat Shrinks Sleeve 9mm                                                     | As agreed and given in Annexure 5 | meter | 5   |  | - |

Total Bid Amount (Without GST) -

Total GST @ 18% -

Total Bid Amount Inclusive of All Taxes -

**Total Bid Amount in words (PKR)**

|                                  |  |                                       |
|----------------------------------|--|---------------------------------------|
| Name (Tenderer's Representative) |  | Tenderer's Official Stamp & Signature |
| Designation:                     |  |                                       |
| Date:                            |  |                                       |

**Note:** The quoted rate will be valid for 90 days  
All supplies & works to be completed on time as mentioned in Tender Documents'  
All terms & conditions mentioned in "Tender Conditions" are accepted to our company