



**Bundelkhand Institute of Engineering & Tech., Jhansi,  
Uttar Pradesh, 284128**

**INVITATION LETTER**

Package Code: TEQIP-III/2019/UP/biej/150  
Package Name: ME-Robotic Arm

Current Date: 04-Mar-2020  
Method: Shopping Goods

**Sub: INVITATION LETTER FOR ME-Robotic Arm**

Dear Sir,

1. You are invited to submit your most competitive quotation for the following goods with item wise detailed specifications given at Annexure I,

Sr. No	Item Name	Quantity	Place of Delivery	Installation Requirement (if any)
1	Robotic Arm	1	BIET, Jhansi	Yes

2. Government of India has received a credit from the International Development Association (IDA) towards the cost of the **Technical Education Quality Improvement Programme [TEQIP]-Phase III** Project and intends to apply part of the proceeds of this credit to eligible payments under the contract for which this invitation for quotations is issued.
3. **Quotation**
  - 3.1 The contract shall be for the full quantity as described above.
  - 3.2 Corrections, if any, shall be made by crossing out, initialling, dating and re writing.
  - 3.3 All duties and other levies payable by the supplier under the contract shall be included in the unit Price.
  - 3.4 Applicable taxes shall be quoted separately for all items.
  - 3.5 The prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
  - 3.6 The Prices should be quoted in Indian Rupees only.
4. Each bidder shall submit only one quotation.
5. Quotation shall remain valid for a period not less than 60days after the last date of quotation submission.
6. Evaluation of Quotations: The Purchaser will evaluate and compare the quotations determined to be Substantially responsive i.e. which
  - 6.1 are properly signed; and
  - 6.2 Confirm to the terms and conditions, and specifications.
7. The Quotations would be evaluated for all items together.
8. Award of contract The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price.

- 8.1 Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of Contract.
- 8.2 *The bidder whose bid is accepted will be notified of the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of the accepted offer shall be incorporated in the purchase order.*

9. Payment shall be made in Indian Rupees as follows:

Payment Description	Expected Delivery Period (in Days)	Payment Percentage
Satisfactory Delivery & Installation	30	90
Satisfactory Acceptance	30	10

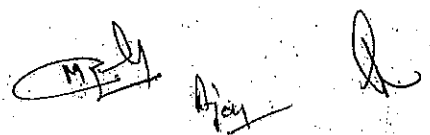
10. Liquidated Damages will be applied as per the below:  
Liquidated Damages Per Day Min %: N/A  
Liquidated Damages Max %: N/A
11. All supplied items are under warranty of 36 months from the date of successful acceptance of items and AMC/Others is .
12. You are requested to provide your offer latest by 15:00 hours on 20-Mar-2020.
13. Detailed specifications of the items are at Annexure I.
14. Training Clause (if any) **Yes**
15. Testing/Installation Clause (if any) **Yes**
16. Performance Security shall be applicable: **5%**
17. Information brochures/ Product catalogue, if any must be accompanied with the quotation clearly indicating the model quoted for.
18. Sealed quotation to be submitted/ delivered at the address mentioned below,  
To,  
**The TEQIP Coordinator  
Civil Engineering Building  
Bundelkhand Institute of Engineering & Tech., Jhansi,  
Uttar Pradesh, 284128**
19. We look forward to receiving your quotation and thank you for your interest in this project.



**(Prof. Mukesh Shukla)**  
Nodal Officer Procurement

## Robotic Arm Specifications (A)

Performance Features:		Metric	SAE Units	
Payload	kg	2.5	lbs	5.5
Tip Speed	m/sec	0.2	ft/sec	0.67
Repeatability	mm	+ / - 0.3	in	0.01
Resolution	degrees	0.1	degrees	0.1
<b>Mechanical:</b>				
Configuration		Vertical Articulated Five-bar linkage		Vertical Articulated Five-bar linkage
No. of Axes		6(3 axes waist-shoulder-elbow manipulator with 3 axes Roll-Pitch-Roll spherical wrist)		6(3 axes waist-shoulder-elbow manipulator with 3 axes Roll-Pitch-Roll spherical wrist)
Horizontal Reach	mm	640	in	25.6
Vertical Reach	mm	420	in	16.8
Link 1	mm	300	in	11.8
Link 2	mm	400	in	15.75
Joint Actuators		DC Servo geared motors		DC Servo geared motors
Transmission		Joint 1 : Spur gear Train Joint 2 & 3 : Ball screw Joint 4,5 & 6 : Belt Drive		Joint 1 : Spur gear Train Joint 2 & 3 : Ball screw Joint 4,5 & 6 : Belt Drive
Gravity Compensation		100% (Non-back drivable ball screw)		100% (Non-back drivable ball screw)
Position Feedback		Optical Encoder (HP 2 phase 500 ppr)		Optical Encoder (HP 2 phase 500 ppr)
Gripper		Pneumatic (20deg angular opening= approx. 40mm)		Pneumatic (20deg angular opening= approx. 1.6in)
Joint Motion Manipulator				
Waist	degrees	340	degrees	340
Shoulder	degrees	45	degrees	45
Elbow	degrees	60* dependent on Axis 2	degrees	60* dependent on Axis 2
Wrist				
Roll	degrees	340	degrees	340
Pitch	degrees	180	degrees	180
Roll	degrees	340	degrees	340
<b>Controller / Software:</b>				
Controller:		PC based with dedicated motion controller.		PC based with dedicated motion controller.
Software		M-Robot		M-Robot
Sensors (Manipulator):		Datum Home sensors and software limits for each axis.		Datum Home sensors and software limits for each axis.
Teaching:		Off-line Joint-space programming Co-ordinate space programming		Off-line Joint-space programming Co-ordinate space programming
Path Type:		Point-to-point Linear & Circular Interpolation path		Point-to-point Linear & Circular Interpolation path
Communication:		Ethernet		Ethernet
Accessories & Input / Output:		8 digital inputs and outputs (NPN Type) 16 digital Inputs/Outputs (Optional)		8 digital inputs and outputs (NPN Type) 16 digital Inputs/Outputs (Optional)
Power Supply:		110/230 V AC, 50/60 Hz		110/230 V AC, 50/60 Hz
Weight	kg	35	lbs	77



**Accessories:**

(B) Desktop Computer- (Compatible for running CAD software) , 8GB RAM, 1 TB HDD, i7 processor, windows 10 , 2.6GHz, graphic card- NVIDIA Ge Force at least 1 GB or equivalent, two free USB ports, 1 DVD drive, 19 inch TFT monitor.

(C) Laser jet Printer- - Multi-Function (Print, Scan, Copy), Scanner type - Flatbed; Printer Output - Black & White only ; Connectivity - USB; 2 inch LCD display, Pages per minute - 14 , - , Page size supported - A4, A5, B5, C5, C6, DL, postcard ; Duplex Print - Manual ; Print resolution - Up to 600 x 600 DPI, Duty Cycle - Up to 5,000 pages per month; Power Input voltage: 110 to 127 VAC (+/- 10%), 50/60 Hz (+/- 2 Hz), 2.9 amp; 220 to 240 VAC (+/- 10%), 50/60 Hz (+/- 2 Hz), 2.5 amp

(D) UPS- 1 KVA with batteries

(E) Servo stabilizer for robotic arm - 2KVA single phase

(F) Compressor - 100 litre tank capacity, pressure- 8-10 bar ( 100 psi )

*Handwritten signatures and initials:*  
1. A signature that appears to be "Ajay".  
2. The name "Ajay" written in a separate, larger script.  
3. A stylized initial or signature.

**FORMAT FOR QUOTATION SUBMISSION**  
(In letterhead of the supplier with seal)

Date: \_\_\_\_\_

To: \_\_\_\_\_

Sl. No.	Description of goods \ (With full Specifications)	Qty.	Unit	Quoted Unit rate in Rs. (Including Ex-Factory price, excise duty, packing and forwarding, transportation, insurance, other local costs incidental to delivery and warranty/ guaranty commitments)	Total Price (A)	Sales tax and other taxes payable	
						In %	In figures (B)
<b>Total Cost</b>							

Gross Total Cost (A+B): Rs. \_\_\_\_\_ (Amount in figures)

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ amount in words) within the period specified in the Invitation for Quotations.

We confirm that the normal commercial warranty/ guarantee of \_\_\_\_\_ months shall apply to the offered items and we also confirm to agree with terms and conditions as mentioned in the Invitation Letter.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Signature of Supplier \_\_\_\_\_

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

Address: \_\_\_\_\_

Contact No. \_\_\_\_\_