

International Institute of Information Technology
Hyderabad

Notice Inviting Tender (NIT) under Two-Cover Bid

System For supply of

COLLABORATIVE ROBOT with MANIPULATOR &
CONTROLLER

to

International Institute of Information Technology
Hyderabad

Tender No.: IIIT-H/Purchase/2022-23/06; Date: 20th June 2022

Sealed quote should reach to the below address on or before

06th July 2022 @ 15:00 Hrs.

Director

IIIT Hyderabad

Professor CR Rao Rd, Gachibowli, Hyderabad,

Telangana - 500032, India.

Introduction

The IIIT-H (*henceforth referred to as the Purchaser*), Hyderabad is planning to purchase “**7 DEGREE-OF-FREEDOM LIGHTWEIGHT COLLABORATIVE ROBOT (COBOT)WITH MANIPULATOR, CONTROLLER, AND NECESSARY ACCESSORIES** for research activities. Bids are invited from bidders in two-cover format, as per the bill of quantity (BoQ) in Annexure-I.

1. Bidder’s Eligibility Criteria

- 1.1) Bidder should be an original equipment manufacturer (OEM) or its authorized vendor. The bidder should submit documentary proof that he is authorized by the OEM to supply the equipment.
- 1.2) The bidder should have a track record of having previously supplied similar equipment to Central/State Government organizations/institutions or other reputed firms. Purchase order copies of previous installations are required along with customer contact details.
- 1.3) In the technical bid, the bidder should clearly demarcate the responsibilities between the OEM and the bidder. Complete details of the same have to be submitted in the technical bid. However, for complete supply, installation, and post-installation service, the bidder shall be responsible.
- 1.4) The bidder has to provide an undertaking on the official letter-head of the company that it has not been blacklisted by any department or undertaking of the Central or State Government department/Public Sector Undertakings (PSU)/Public Sector Enterprises (PSE)/ Banks in India.
- 1.5) The bidder (along with the OEM) should be in a position to demonstrate their competence and capability as a team, to deliver all the services expected during the period.

2. Submission of Bid

- 2.1) The offer should be in the two-bid system in a two-cover format – i.e., “Technical bid” and “Commercial bid”. Tender bid along with Earnest Money Deposit (submitted in the form of Bank Draft in favour of ‘**IIIT Hyderabad**’ payable at ‘**Hyderabad**’. If the proof of payment of EMD is not received along with the technical bid, such bid will not be considered. Last date of submission is **6th July 2022 @ 15:00 Hrs.**
- 2.2) Technical bid must contain only the technical details. This part must not include price offered by the bidder. The price must be mentioned only in the commercial bid part.
- 2.3) Late or delayed tenders shall be summarily rejected.
- 2.4) Bidder(s) must submit their PAN issued by Income Tax authorities, TIN, and a copy of the PAN/TIN with the bid.
- 2.5) Bid document(s) and all enclosures must contain the name and address of the bidder, as well as the signature and seal of the authorized representative of the bidder.
- 2.6) The bank/RTGS details on the letter-head of the bidder(s) must be submitted along with the tenders (technical bid). A copy of the cancelled cheque should also be attached.

3. Technical Bid

The technical bid should contain following

- 3.1) Overall compliance statement indicating adherence to each and every clause in the terms and conditions, as per Annexure-II.
- 3.2) Detailed technical descriptions and specification of the specific machine/system quoted.

- 3.3) A letter from the OEM authorizing the bidder to bid for this tender.
- 3.4) It is mandatory that the Bill of Quantity (BoQ) adequately covers all necessary equipment/machine/system as mentioned in Annexure-I.
- 3.5) The bidder must specify the exact make and model number of equipment quoted.
- 3.6) Equipment should be factory assembled and tested at the OEM site.
- 3.7) Technical bid should contain un-priced detailed BoQ.

4. Commercial Bid

- 4.1) The commercial bid should contain details of the prices for each of the item separately. Price quoted should be inclusive of all taxes, delivery, and installation charges at IIIT Hyderabad.
- 4.2) Price must be offered only in the prescribed priced bid format for all the line items (Annexure III).
- 4.3) Price should include all discounts applicable to the research institution.

5. Guidelines

- 5.1) The Bidder is expected to examine all instructions, forms, and specifications in the bidding documents. Bidder should consider any corrigendum published on the tender document before submitting their bids.
- 5.2) Agreeing to the terms and conditions of the tender document (by signing all pages of the copy of the tender document) is a mandatory requirement. Failure to furnish all information required by the bidding documents or submission of a bid not substantially responsive to the bidding documents in every respect will be at the Bidder's risk and may result in rejection of its bid.
- 5.3) It is compulsory to bid for all the items / systems, otherwise the tender bid will result into rejection.
- 5.4) The bid prepared by the bidder, as well as all correspondence and documents relating to the bid shall be written in English language.
- 5.5) Regarding any clarification on technical aspects or any other issue, email can be sent to head.procurement@iiit.ac.in. No queries will be entertained on phone. The changes in the tender, if any, would be published on the IIIT website.
- 5.6) Delayed and/or incomplete tenders are liable to be rejected.
- 5.7) The technical bid should not contain any price information. Non-conformance will result in disqualification.
- 5.8) All pages of the technical bid should be duly signed by the bidder.
- 5.9) The bidders are requested to go through the terms and conditions detailed in this document, before filling out the tender.
- 5.10) The bidder shall bear all costs associated with the preparation and submission of its bid, and "the Purchaser", will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.
- 5.11) Award criteria: the two-cover system will be followed; the technical and commercial bids will be opened:
 - (i) Commercial bids of technically qualified bids alone will be taken up for further processing. Decision of IIIT Hyderabad will be final and binding.

- (ii) IIIT Hyderabad will award the tender to the eligible bidder whose technical bid has been accepted by the Purchase Committee to meet technical evaluation criteria, and who has offered the lowest evaluated bid price.

5.12) IIIT Hyderabad reserves the right to accept or reject any bid, and to cancel the tender process and reject all bids, at any time prior to the award of contract, without thereby incurring any liability to the affected bidder(s) or any obligation to inform the affected bidder(s) of the grounds for the IIIT-H action.

5.13) The Director, IIIT Hyderabad reserves the right to modify the technical specifications or the required quantity at any time.

5.14) Any disputes will be under jurisdiction of Hyderabad.

5.15) The bid must be addressed to “The Director, IIIT Hyderabad” and the hard copy should be submitted via post or in person to “IIIT Hyderabad, Professor CR Rao Rd, Gachibowli, Hyderabad, Telangana–500 032”. In addition, the softcopy should be emailed to head.procurement@iiit.ac.in (The bidder needs to send the soft copy with password protection and the password needs to be submitted, if the bidder is technically qualified.)

5.16) The envelope containing the tender should be superscribed at the top as ‘Tender Bid for “ 7 DEGREE-OF-FREEDOM LIGHTWEIGHT COLLABORATIVE ROBOT (COBOT)WITH MANIPULATOR, CONTROLLER, AND NECESSARY ACCESSORIES.

6. Commercial Terms and Conditions

6.1) The commercial bid should contain, among other things, payment terms, warranty, installation, and commissioning charges. These charges will be paid only after successful supply, installation, and acceptance.

6.2) Price should be quoted per unit and the total amount for the required quantity should also be quoted.

6.3) Offer should be valid for 90 days from the date of submission.

6.4) EMD for Rs. 30,000 /- should be submitted in a separate cover along with the technical and commercial bids.

6.5) EMD of unsuccessful bidders will be returned after tender process.

6.6) Technical evaluation by the Institute may include demonstration to verify functionalities and capabilities of the system quoted.

6.7) Any deviation in the system specifications from the accepted terms will lead to the rejection of the supply.

6.8) The bidders need to supply all the goods in the specified form to the satisfaction/specifications specified in the order/tender and demonstrate at their own cost.

6.9) The bidder must give a technical presentation with explanation of all functions before the opening of financial bids, if called for by the purchase committee.

6.10) Original catalogue with model numbers must be submitted. Just typing the tender specifications on company letterhead will cause to rejection of tender without any clarifications.

6.11) Manuals related to operating, maintenance, servicing, and programming shall be submitted (1 set of hard copy and also a soft copy in English).

6.12) IIIT Hyderabad reserves the right and has sole discretion to reject the lowest evaluated bid. If more than one bidder happens to quote the same lowest price, then IIIT Hyderabad reserves the right to decide the

criteria and further process for awarding the contract, and decision of IIIT Hyderabad shall be final for awarding the tender.

- 6.13) Minimum 3 years comprehensive warranty shall be provided by the supplier for all items.
- 6.14) Bidders must give the comprehensive on-site warranty as required from the date of successful installation of Equipment against any manufacturing defects and also give the warranty declaration that “Everything to be supplied by us here under shall be free from all defects and faults in material, workmanship and shall be of the highest quality and material of the type ordered, shall be in full conformity with the specification and shall be complete enough to carry out the experiments, as specified in the tender document.”
- 6.15) The Purchaser Shall promptly notify the vendor/bidder/Supplier in writing of any claims arising under this warranty. Upon receipt of such notice, the bidder shall immediately within ‘Two weeks’ arrange to repair or replace the defective goods or parts thereof free of cost at the ultimate destination. The Supplier shall take over the replaced parts/goods at the time of their replacement. No claim whatsoever shall lie to the Purchaser for the replacement parts/goods thereafter. The period for correction of defects in the warranty period is ‘Two week’ and may be extended depending on the nature of defect. If the supplier having been notified fails to remedy the defects within Two week, the purchaser may proceed to take such remedial action as may be necessary, at the supplier’s risk and expenses without prejudice to any other rights, which the purchase may have against supplier under the contract.
- 6.16) The maintenance charges (AMC) under different schemes after the expiry of the warranty shall also be mentioned separately. The comprehensive warranty shall commence from the date of the satisfactory installation/commissioning of the equipment against the defect of any manufacturing, workmanship, and poor quality of the components.
- 6.17) After the warranty period is over, Annual Maintenance Contract (AMC)/Comprehensive Maintenance Contract (CMC) should be started. The AMC/CMC Charges shall not be included in computing the total cost of the equipment/machine/system. The award of AMC is optional and shall be decided by the purchase committee.
- 6.18) Pre-installation site preparation/inspection requirements to be indicated and specified along with the bid.
- 6.19) The Vendors who have earlier supplied the similar machines/systems in last 5 years to any of the IITs, IISc, NITs, IIITs, reputed technical institutions, and other scientific organizations of National/International repute, the details of such institutions and the cost with name of equipment may also be supplied with the bids.
- 6.20) Pre dispatch inspection will be done by the technical concerned authority/purchase committee to the company factory premises before dispatching the machine in order to check whether the system manufactured is as per tender specifications or not.
- 6.21) The total solution consisting of supply, installation, and commissioning, as per the PO (Purchase order), should be completed within 6 to 8 weeks after receiving the PO from IIIT Hyderabad. If the bidder fails to deliver and place any or all the Equipment or perform the service by the specified date, penalty at the rate of 1% per week of the total order value subject to the maximum of 5% of total order value will be deducted.
- 6.22) In case of any mishappening/damage to equipment and supplies during carriage from the origin of equipment to the installation site, the supplier has to replace it with new equipment/supplies immediately at his own cost. Supplier will settle his claim with the insurance company as per his convenience. IIIT Hyderabad will not be liable to any type of losses in any form.

7. PAYMENT TERMS

- 7.1) Payment terms 75% after delivery & and balance 25% on Installation/acceptance/submission of bank guarantee and warranty certificate.
- 7.2) The performance security guarantee deposit @ 10 % of the order value needs to be submitted, which will be returned after successful completion of one year after installation.

Annexure - I

Technical Specifications

7 DEGREE-OF-FREEDOM LIGHTWEIGHT COLLABORATIVE ROBOT (COBOT) WITH MANIPULATOR, CONTROLLER, AND NECESSARY ACCESSORIES.

The robot should meet all the following technical specifications and terms and conditions, unless otherwise stated.

1. MANIPULATOR AND CONTROLLER

Number of joint axes	Seven rotating joints
Joint transmission	Harmonic Drive gears
Total Weight of the robot	Less than 15Kg
Payload	Minimum 3Kg
Reach	650mm or more
Operating temperature range	25 to 50 degrees or wider range
Repeatability	Within ± 0.2 mm
Programming Language	C++ and/or Python
Software Compatibility	<ol style="list-style-type: none"> 1. Default API 2. Should have ROS compatibility
Operating system	Windows 10 and Linux Ubuntu 16.04 above
Low-level controller	Position, velocity, current (for all the joints)
Noise	Comparatively noiseless
Protection rating	Minimum IP33 standard
Maximum Speed	1m/s
Communication Mode	Ethernet
Hardware Compatibility	12-24V inputs/outputs, ModBus RTU(RS485)
Interface	emergency stop, GUI, etc.

2. NECESSARY ACCESSORIES:**2.1. GRIPPER**

Finger joint type and mechanism	Rotary joints and Underactuated (adaptable) - Two-Finger Gripper
Actuation	Only Electric with I/O ports
joint sensor	Encoders (for each joint)
Gripping force	20 N or more
Grasping object diameter	Minimum: 5 mm or less, Maximum: 45 mm or more
Total weight	Less than 1 kg
Hardware interface compatibility	Should be modular and independently driven even in the absence of manipulator
Programming Language	C++ and/or Python
Software Compatibility	1. 1.Default API/GUI 2. 2.Should have a ROS compatibility

2.2 FORCE TORQUE SENSOR

Force range F_x, F_y, F_z	Minimum 25 N
Moment range M_x, M_y, M_z :	Minimum 4 N
Hardware interface compatibility	Could be used independently, even in the absence of a manipulator (standalone operational capability). Compatible with the Gripper
Programming Language	C++ and/or Python
Software Compatibility	1. Default API/GUI 2. Should have a ROS compatibility
3.1 AC power controller to power it from the AC supply and additional DC power controller to power it from the DC source.	
3.2 The robot should be equipped with a force/torque sensor that is compatible with the Gripper to perform high-precision assembly tasks and to precisely detect and measure the contacts.	
3.3 Power and communication cables (at least 10 meter), compatible software, and couplings for Gripper (2.1) and a force/torque sensor (2.2) should be provided.	
3.4 All software packages (ROS Packages, Matlab scripts (optional)) and sample software programs (ready-to-program tasks) should be supplied with the robot.	
3.5 All necessary and suitable accessories, such as a Camera mounting plate for mounting sensors at the wrist and base frame & clamps for tabletop fitting, etc., should be included.	

Annexure -II

Technical Bid Compliance Checklist

Sr. No.	Criterion	Yes/No
	Is EMD attached?	
	Is the declaration sheet attached?	
	Is the bidder original equipment manufacturer (OEM)/authorized dealer?	
	Letter from OEM stating that the bidder is authorized to supply the equipment is attached?	
	Whether the bidder has supplied similar equipment to Govt institutes/organizations or reputed firms and whether documentary proof attached?	
	Does the machine comply with all the required technical specifications as per Annexure - I. Attach a separate sheet showing compliance with the specifications and explanations, if the equipment's varies from the requested specifications?	
	BoQ compliance sheet filled in and a copy of masked commercial bid Attached?	
	Whether three years comprehensive onsite extended warranty offered?	
	Whether Annual maintenance cost (AMC) after expiry of comprehensive onsite warranty quoted separately as optional?	
	Whether training to research students/faculty/staff is offered without any charges?	

Annexure -III

Price Bid Form

Sr. No.	Description	Unit	Qty. price	Taxes	Total price

All the vendors should quote using the above format only else will be disqualified.

< **Organization Letter Head** >>**DECLARATION SHEET**

We, _____ hereby certify that all the information and data furnished by our organization with regard to this tender specification are true and complete to the best of our knowledge. I have gone through the specification, conditions and stipulations in details and agree to comply with the requirements and intent of specification. This is certified that our organization has been authorized (Copy attached) by the OEM to participate in Tender. We further certified that our organization meets all the conditions of eligibility criteria laid down in this tender document. Moreover, OEM has agreed to support on regular basis with technology / product updates and extend support for the warranty.

We, further specifically certify that our organization has not been Blacklisted/De Listed or put to any Holiday by any Institutional Agency/ Govt. Department/Public Sector Undertaking in the last three years.	NAME & ADDRESS OF THE Vendor/ Manufacturer / Bidder
1 Phone	
2 Fax	
3 E-mail	
4 Contact Person Name	
5 Mobile Number	
6 TIN Number	
7 PAN Number	
8 Kindly provide bank details of the bidder in the following format: a) Name of the Bank; b) Account Number; c) Kindly attach scanned copy of one Cheque book page to enable us to return the EMD to unsuccessful bidder	

(Authorized Signature with Stamp)