

# LOCAL TENDER NOTICE



Tender No.: IISc/Purchase/CPS/2025-26/03  
Date: 10<sup>th</sup> December 2025

## TENDER DOCUMENT

Chairperson  
Cyber Physical Systems  
Division of Interdisciplinary Sciences  
Indian Institute of Science  
C. V. Raman Road  
Bangalore 560012 (INDIA)

Website: [www.iisc.ac.in](http://www.iisc.ac.in)

GSTIN: 29AAATI1501J2ZV

Email ID for this tender  
[office.cps@iisc.ac.in](mailto:office.cps@iisc.ac.in)

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**DEPARTMENT OF CYBER PHYSICAL SYSTEMS**  
**INDIAN INSTITUTE OF SCIENCE (IISc), BENGALURU, INDIA**

The Department of Cyber Physical Systems, Indian Institute of Science Bengaluru, invites tenders for supply of “

”. This Invitation for Bids is open to all domestic (India based) manufacturers, Indian OEM or its authorized Indian distributors only.

**The scope of the supply includes Installation, Commissioning and Training on site.**

**BID SCHEDULE**

1	Tender number	<b><i>IISc/Purchase/CPS/2025-26-3</i></b>
2	Tender Date	<b><i>10.12.2025</i></b>
3	Item Description	<b><i>Supply of Mobile robot and Light weight manipulator with accessories</i></b>
4	Tender Type	Two Bid System: (a) Technical Bid (Part A) (b) Commercial Bid (Part B)
5	Place of Tender submission	The Chairperson Department of Cyber Physical Systems (CPS), Indian Institute of Science, Bangalore – 560012
6	Last date & Time for submission oftender	<b><i>02.01.2026</i></b>

**To whom it may concern**

This is a **Request for quote (RFQ)** from **Indian Agencies** for “**Mobile robot and Light weight manipulator with accessories**” at the “**Department of Cyber Physical Systems (CPS), Indian Institute of Science, Bengaluru.**

*This Invitation for Bids is open to only domestic (India based) manufacturers, Indian OEM or its authorized Indian distributors.* All interested vendors shall submit a response demonstrating their capabilities to produce the requested equipment to the primary point of contact listed below. **With respect to this tender, the rules laid out by the Government of India in order No. P45021/2/2017-pp-BE-II issued by the Public Procurement Section, Department or Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, dated 4th June 2020 will be followed.**

The deadline for submission of proposals is **02.01.2026@ 5.00 PM** Proposals should arrive at the office of

**The Chairperson,**  
**Department of Cyber Physical Systems**  
**Kind Attn: Dr. Ravi Prakash**  
**Indian Institute of Science**  
**Bengaluru - 560012**  
**Karnataka, India.**

Direct all questions concerning the acquisition to addresses to **Office CPS** at: [office.cps@iisc.ac.in](mailto:office.cps@iisc.ac.in)

## Eligibility Criteria

### Prequalification criteria:

1. The Bidder's firm should have existed for at least 3 years. The bidder should enclose company registration certificate.
2. The Bidder should belong to either class 1 or class 2 supplier distinguished by their "local content" as defined by recent edits to GFR (please refer to annexure 1 attached). They should mention clearly which class they belong to in the cover letter.
  - a. Class 1 supplier: Goods and services should have local content of equal to or more than 50%.
  - b. Class 2 supplier: Goods and services should have local content of equal to or more than 20 % and less than 50%.
  - c. Bidders offering imported products will fall under the category of non-local suppliers. They cannot claim themselves as Class-1 local suppliers/Class-2 local suppliers by claiming services such as transportation, insurance, installation, commissioning, training, and other sales service support like AMC/CMC, etc., as local value addition.
  - d. Purchase preference as defined by the recent edits to GFR (within the "margin of purchase preference") will be given to the Class-1 supplier.
  - e. MSMEs can seek an exemption to some qualification criteria. IISc follows GFR2017 for such details.
3. The Bidder must not be blacklisted/banned/suspended or have a record of any service related dispute with any organization in India or elsewhere. A declaration to this effect has to be given as per Annexure 3.
4. The bidder should sign and submit the declaration for Acceptance of Terms and Conditions as per Annexure 4.
5. The bidder should provide a support certification as per Annexure 6
6. The Bidder should have qualified technical service personnel for the instrument(s) based in India.
7. INR quotes should be on a FOR-IISc Bangalore basis.
8. The order will be placed only on the bidder who participated in the bid.

## **General Terms and Conditions**

1. The bid should be submitted in the two-cover system, i.e., technical bid and commercial bid separately in sealed covers. The technical bid should contain all commercial terms and conditions, except the price.
2. The technical bid must contain a point-by-point technical compliance document. The technical proposal should contain a compliance table that should describe your compliance in a "yes" or "no" response against each of the items in the table listed in this RFQ. If "no" the second column should state, the extent of deviation. The third column should state the reason for the deviation, if any. The fourth column can be used to compare your tool with that of your competitors or provide details as requested in the technical requirement table below.
3. In the commercial bid, the price should be inclusive of all discounts.
4. The vendor should have qualified technical service personnel for the equipment based in India (preferably in Bangalore). The Bidder should belong to either Class-1 or Class-2 suppliers distinguished by their "local content" as defined by recent edits to GFR. They should mention clearly which class they belong to in the cover letter. a) Class-1 supplier: Goods and services should have local content of equal to or more than 50%. b) Class-2 supplier: Goods and services should have local content of equal to or more than 20% and less than 50%.
5. The covering letter should clearly state that whether the vendor is a Class-I or Class-II local supplier. Failing this the bid will be automatically rejected.
6. Any "Non-local supplier" i.e. "a supplier or service provider, whose goods, services or works offered for procurement, has local content less than 20%" is ineligible to participate in this tender.

7. The vendor to state the percentage of the local content and provide self-certification that the item offered meets the minimum local content requirement. They should also give details of the location(s) at which the local value addition is made.

8. The lead time for the delivery of the equipment should not be more than 3 months from the date of receipt of our purchase order. It should be clearly mentioned in the technical and commercial bids.

9. All the quotations must be valid for at least 90 days at the time of submission.

10. List of customers and references: **The Bidder should have supplied similar equipment in Central Universities/govt research labs, preferably in centrally Funded Technical Institutes/Research labs (IITs, IISC, IISER, NIT, HAL, NAL, DRDO Labs). Please provide the details, performance certification from customers and contact information.**

11. The Bidder must not be blacklisted/banned/suspended or have a record of any service-related dispute with any organization in India or elsewhere. A declaration to this effect should be provided.

12. Items in addition to that listed in the technical table that you would like to bring to the attention of the committee, such as data sheets, technical plots etc. can be listed at the end of the compliance table.

13. Vendors are encouraged to highlight the advantage of their system over their competitors.

14. If needed, a meeting for any technical clarifications can be scheduled with the undersigned by sending an email and a physical visit to the vendor facility and their customer facility will be undertaken.

15. The Institute reserves the right to accept or reject any bid, or to annul the bidding process and reject all bids, at any time prior to the award of contract without thereby incurring any liability of the affected bidder or bidders.

16. Warranty terms and additional warranty options is a must for all the components. Please specify the service plan like whether the local distributor will address the issue or the parent company.

17. Terms and conditions for the annual maintenance contract beyond the warranty period should be mentioned.

18. After the award of purchase order, the vendor must provide an Order Acknowledgement within 30 days from the receipt of the Purchase Order.

19. Please quote the price of each optional line item, separately.

## **Technical Specifications**

Please note that the requirements listed below are only guidelines. It does not disbar bids that do not meet the criteria listed. Vendors are requested to quote for equipment that meet the criteria to the best extent possible and list deviations. Deviations are NOT an automatic reason for disqualification. Any deviations will be discussed by the technical committee prior to making an informed decision.

### **Technical Specifications towards Supply of “Mobile robot-10 Nos and Liht Weight manipulator with accessories- 4 No.s”**

#### **Specifications of Mobile robot & Light weight Manipulator with accessories**

##### **Lightweight Manipulator: (Number of Qty 4)**

Category	Parameter	Required Specification (Qualifying Criteria)
1. Manipulator Kinematics	Degrees of Freedom (DoF)	Minimum 7 DoF (Seven Axes) to enable null-space control and obstacle avoidance (Redundant Kinematics).
	Kinematic Structure	Humanoid-inspired joint configuration (Shoulder-Elbow-Wrist architecture).
	Reach	Minimum 580 mm
	Payload Capacity	Minimum 3.0 kg (Must handle LiDARs, Grippers, or heavy sensors).
	Repeatability	Better than or equal to $\pm 0.1$ mm
2. Physical Construction	Robot Weight	Maximum 5.0 kg (Critical for mobile base integration to prevent tipping).
	Payload-to-Weight Ratio	Minimum 0.6 (Robot must lift ~60% of its own weight).
	Mounting Orientation	Multi-pose support: Tabletop, Wall-mount, Ceiling/Inverted, and Mobile Robot mounting.
	Construction Material	Lightweight Aluminum Alloy / Carbon Fiber composite or equivalent.
3. Actuation & Joint Specs	Joint Range	Infinite rotation ( $\pm 360^\circ$ ) on Wrist/End-effector joint preferred.
	Joint Speed	Minimum 180°/s on major axes (J1-J3); Minimum 220°/s on wrist axes.
	Motors	Integrated Quasi-Direct Drive (QDD) or high-torque frameless motors.
4. Control & Computation	Controller Type	Integrated Controller (No bulky external control box allowed; must be built into the base).
	Communication Interfaces	Ethernet (TCP/IP), CAN Bus, RS485.
	Control Frequencies	Minimum 500 Hz control loop for real-time visual servoing.
	Power Input	DC 24V (Compatible with standard Mobile Robot power rails).
5. Software & Intelligence	ROS Support	Native support for ROS 1 (Noetic) and ROS 2 (Humble) with MoveIt! configuration files provided.
	SDK & API	Python and C++ SDKs explicitly available.
	Simulation	Digital Twin support in Gazebo, Isaac Sim, and MuJoCo.
	Learning Modes	Supports Drag-and-Teach (Kinesthetic Teaching) and Master-Slave Teleoperation.
6. End-Effector	Tool Flange	Standard ISO mechanical flange for easy gripper swapping.
	Signal Pass-through	Integrated power and communication ports at the flange for grippers/cameras (to reduce external cabling).

<b>7. Teleoperation &amp; Data Collection</b>	<b>Handheld Master Device</b>	<b>Wireless 6-DoF Spatial Tracker &amp; Gripper Interface</b>  (Must allow "Master-Slave" control where the human hand motion is mapped directly to the robot arm in real-time).
	<b>Tracking Technology</b>	Vision-based or Inertial 6D Pose Tracking (Accuracy < 1mm, Latency < 20ms).
	<b>Feedback Mechanism</b>	Haptic or Visual feedback on the handheld unit to indicate gripper open/close state.
	<b>Data Logging</b>	Native software support to record <b>(Joint States + End-Effector Pose + Image Data)</b> simultaneously for <b>Imitation Learning</b> datasets (e.g., ALOHA or equivalent format).
	<b>Compatibility</b>	Plug-and-Play USB-C/Wireless dongle integration with the Robot Operating System (ROS 1/2).

### Mobile Robot. (Number of qty : 10)

Category	Parameter	Required Specification (Minimum/Mandatory)
1. Mechanical & Kinematics	Drive System Modularity	Must support 4 distinct kinematic modes in a single unit: 1. 4-Wheel Differential Drive 2. Ackermann Steering (Car-like) 3. Mecanum Drive (Omnidirectional) 4. Tracked/Crawler Drive Switching between modes must be possible via wheel swapping.
	Dimensions	Compact desktop form factor: Approx. 320 x 220 x 250 mm
	Steering Mechanism	High-precision servo steering for Ackermann mode
	Climbing Ability	Minimum 20° (wheeled modes); Minimum 35° (tracked mode)
	Payload	Minimum 4 kg expandable payload capacity
2. Computation & Control	AI Processor	NVIDIA Jetson Orin Nano (8GB Version) or superior
	AI Performance	Minimum 40 TOPS (Trillions of Operations Per Second)
	CPU	6-core Arm Cortex-A78AE v8.2 64-bit CPU
	RAM	Minimum 8GB LPDDR5
	OS & Frameworks	Pre-installed Ubuntu 20.04; Full support for ROS 1 (Noetic) and ROS 2 (Humble)
3. Sensors & Perception	LiDAR	360° Laser Range Finder (Scanning Freq: 6-12Hz, Range: 0.1-12m)
	Vision System	Front-facing RGB-D Depth Camera (Resolution: 1280x720, Depth Range: 0.2m-5m)
	IMU	Integrated 9-Axis IMU (Accelerometer, Gyroscope, Magnetometer)
	Onboard Interaction	Integrated Touchscreen Display (Min 7-inch) for direct IP configuration, mode switching, and status monitoring without an external PC.
	Audio	Built-in voice module (Microphone + Speaker) for HRI (Human-Robot Interaction) research
4. Power & Connectivity	Battery	12V / 10,000 mAh Li-ion Battery
	Runtime	Minimum 2.5 hours continuous operation; 4+ hours standby
	Connectivity	Dual-Band Wi-Fi (2.4G/5G), Bluetooth 5.0
	Expansion Ports	Minimum 2x USB 3.0, 1x USB Type-C, Power output for external sensors
5. Educational Value	Open Source	Full access to SDK, simulation models (Gazebo/Webots), and GitHub repositories.



- ✚ Should have proven record of successful installations within Indian education/research institutes. Proof of such installation must be enclosed.
- ✚ The OEM/Supplier should have trained service engineers stationed in India for any on-site service requirement, details to be provided in the offer.
- ✚ OEM/supplier should have requisite stock of necessary spare parts in India.

### **TERMS AND CONDITIONS**

1. Warranty period: Two years and continued maintenance support with necessary spare parts for ten years.
2. Supplier Credibility:
  - a. The Bidder/Vendor Must have supplied minimum 3 similar orders to reputed Government Organizations in INDIA. Copies of Purchase Orders to be enclosed along with the Technical Bid as proof.
  - b. Please enclose User list in INDIA along with the contact details and performance certificate.
  - c. The bidder/vendor shall have a yearly turnover of at least 20 Cr for the past five years.
  - d. Vendor shall have local service engineers available to attend maintenance/troubleshooting/breakdown etc within 24hrs from the date of complaint registration. Details of local service engineers with their experience shall be shared along with the proposal. Vendor Shall ensure spares and service support for the quoted model for next 10 years
  - e. The supplier shall have prior experience in handling turnkey projects involving Mobile robot-10 Nos and Liht Weight manipulator. Supplier should have supplied, installed and details to be indicated in technical offer with supporting documents. Contact information of personnel from the organizations of installation to be given.
    - a. IISc team may contact/visit the customers and obtain feedback regarding the installed systems.
3. The Institute reserves the right for final selection of items.
4. Vendors may quote any other items/accessories separately as "Optional Items".

For queries or clarifications, please contact:

*CPS Office*  
*Department of Cyber Physical Systems*  
*Indian Institute of Science,*  
*Bengaluru, Karnataka 560012*  
*office.cps@iisc.ac*

## Annexure-1

### Details of the Bidder

The bidder must provide the following mandatory information & attach supporting documents wherever mentioned:

### Details of the Bidder

Sl. No	Items	Details
1.	Name of the Bidder	
2.	Nature of Bidder (Attach attested copy of Certificate of Incorporation/ Partnership Deed)	
3.	Registration No/ Trade License, (attach attested copy)	
4.	Registered Office Address	
5.	Address for communication	
6.	Contact person- Name and Designation	
7.	Telephone No	
8.	Email ID	
9.	Website	
10.	PAN No. (attach copy)	
11.	GST No. (attach copy)	

Signature of the Bidder

Name

Date:

Designation, Seal

**Annexure-2:**

Declaration regarding experience

To,  
The Chairperson,  
TCS Smart-X Hub  
Department of Cyber Physical Systems,  
Indian Institute of Science,  
Bangalore – 560012, India.

Ref: Tender No: XXXXXXXXXX

Dated: XXXXX

Dear Sir/Madam

I've carefully reviewed the Terms & Conditions in the above-referred tender. I hereby declare that my company/firm has ----- years of experience in supplying and installing the proposed equipment.

(Signature of the Bidder)

Printed Name  
Designation, Seal

**Annexure-3:**

## Declaration regarding track record

To,  
The Chairperson,  
TCS Smart-X Hub  
Department of Cyber Physical Systems,  
Indian Institute of Science,  
Bangalore – 560012, India.

Ref: Tender No: XXXXXXXX

Dated: XXXXX

Dear Sir/Madam,

I've carefully reviewed the Terms & Conditions in the above-referred tender. I hereby declare that my company/ firm is not currently debarred/blacklisted by any Government/ Semi Government organizations/institutions in India or abroad. I further certify that I'm a competent officer in my company/firm to make this declaration.

Or

I declare the following

Sl. No.	Country in which the company is Debarred /blacklisted / case is Pending	Blacklisted / debarred by Government / Semi Government/Organizations /Institutions	Reason	Since when and for how long

(NOTE: In case the company/firm was blacklisted previously, please provide the details regarding the period for which the company/firm was blacklisted and the reason/s for the same).

Yours faithfully  
(Signature of the Bidder)

Name  
Designation, Seal

**Annexure – 4:**

Declaration for acceptance of terms and conditions

To,  
The Chairperson,  
TCS Smart-X Hub  
Department of Cyber Physical Systems,  
Indian Institute of Science,  
Bangalore – 560012, India.

Ref: Tender No: XXXXXX

Dated: XXXX

Dear Sir/Madam,

I've carefully reviewed the Terms & Conditions mentioned in the above-referred tender document. I declare that all the provisions of this tender document are acceptable to my company. I further certify that I'm an authorized signatory of my company and am, therefore, competent to make this declaration.

Yours faithfully,

(Signature of the Bidder)

Name

Designation, Seal

Date

## **Annexure – 5:**

Details of items quoted:

- a. Company Name
- b. Product Name
- c. Part / Catalogue number
- d. Product description / main features
- e. Detailed technical specifications
- f. Remarks

Instructions to bidders:

1. Bidder should provide technical specifications of the quoted product/s in detail.
2. Bidder should attach product brochures along with the technical bid.
3. Bidders should clearly indicate compliance or non-compliance with the technical specifications provided in the tender document.

## **Annexure 6 – Support Certification**

Declaration for instrument support

To,  
The Chairperson,  
TCS Smart-X Hub  
Department of Cyber Physical Systems,  
Indian Institute of Science,  
Bangalore – 560012, India.

Ref: Tender No: XXXXXX

Dated: XXXX

Dear Sir/Madam,

I've carefully reviewed the Terms & Conditions mentioned in the above-referred tender document. I declare that the model quoted has not been discontinued by our organization and the repair parts will be available for atleast another ten years. I further certify that I'm an authorized signatory of my company and am, therefore, competent to make this declaration.

Yours faithfully,

(Signature of the Bidder)

Name

Designation, Seal

Date

## Section 6. Commercial bid

The commercial bid should be furnished with all requirements of the tender with supporting documents as mentioned under:

S.No	Description	Cat. Number	Quantity	Unit Price	Sub total
1.	Essential items noted in the technical specification				
1.a	... (details of essential items)				
1.b	...				
2.	Optional items noted in the technical specification				
2.a	... (details of Optional items)				
2.b	...				
3.	Accessories for operation and installation				
4.	All Consumables, spares and software to be supplied locally				
5.	Warranty (1 year)				
6.	Cost of Insurance and air freight				
7.	CIP/CIF/FOR IISc, Bengaluru				

Any additional items

S.No	Description	Cat. Number	Quantity	Unit Price	Sub total

The Chairperson,  
TCS Smart-X Hub  
Department of Cyber Physical Systems  
Indian Institute of Science,  
Bangalore – 560012, India



## **Section 7 – Checklist**

(This should be enclosed with technical bid - Part A)

The following items must be checked before the Bid is submitted:

**A. Sealed Envelope “A”: Technical Bid**

1. Section 5 - Technical Bid (each page signed by the authorized signatory and sealed) with the below annexures:
  - a. Annexure 1: Bidders details
  - b. Annexure 2: Declaration regarding experience
  - c. Annexure 3: Declaration regarding clean track record
  - d. Annexure 4: Declaration for acceptance of terms and conditions
  - e. Annexure 5: Details of items quoted
  - f. Annexure 6: Support Certification
2. Copy of this tender document duly signed by the authorized signatory on every page and sealed.

**B. Sealed Envelop “B”: Commercial Bid**

Section 6: Commercial Bid

Your quotation must be submitted in two envelopes: Technical Bid (Envelope A) and Commercial Bid (Envelope B) super scribing on both the envelopes with Tender No. and due date and both of these in sealed covers and put in a bigger cover which should also be sealed and duly super scribed with Tender No., Tender description & Due Date