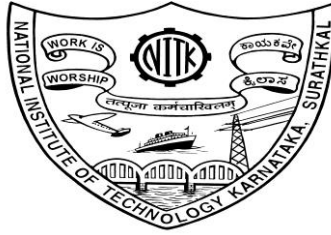


# NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL

DEPARTMENT OF MECHANICAL ENGINEERING  
 POST SRINIVASNAGAR, MANGALORE – 575 025 (D K)  
 Phone: (0824) 2474000. Fax: (0824) 2474033  
 E- mail: [info@nitk.ac.in](mailto:info@nitk.ac.in) Website: <http://www.nitk.ac.in>



## NOTICE INVITING QUOTATION

Notification. No.:NITK/MECH/DRDO/KRG/2010/2021-22

dated: 17/08/2022.

|  |   |
|--|---|
| <b>Name of Goods</b>   | TurtleBot 3   |
| <b>Estimated Amount:</b>                                       | 59,436/-  |
| <b>Time for Supply of item after release of Purchase order</b> | <b>Two Weeks</b>  |
| <b>Document Download / Sale Start Date</b>                     | 17/08/2022  |
| <b>Clarification Start Date</b>                                | 17/08/2022  |
| <b>Clarification End Date</b>                                  | 24/08/2022  |
| <b>Bid Submission Start Date</b>                               | 17/08/2022  |
| <b>Last Date for submission of bids</b>                        | 29/08/2022 <b>before 3.00 PM</b>  |
| <b>Bid Opening Date</b>  | 29/08/2022 <b>before 3.00 PM</b>  |
| <b>Address for Submission of bids</b>                          | Dr. Vasudeva M<br>Assistant Professor<br>Department of Mechanical Engineering<br>NITK, Surathkal,575025<br>9008889796 |



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**NOTICE INVITING QUOTATION (NIQ)**

The National Institute of Technology Karnataka, Surathkal (in short – NITK, Surathkal) is an Institute Of National Importance Under Ministry of Education Govt of India, imparting Technical Education and engaged in Research Activities. It is proposed to procure the items for the departmental academic/research activities.

Sealed Quotations as per the Price Schedule given in this NIQ are invited for the following items subject to the terms and conditions, from the reputed manufacturers or its authorised dealers so as to reach on or before scheduled date and time. The quotations in the firm's Business letter head should be address to the "Director, NITK, Surathkal". The envelope shall be superscribed with the Quotation Notification Number and the Name of the Goods for which quotation is submitted.

|  |                                  |
|--|----------------------------------|
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**Sd/-**  
**HOD**

Note: Institute shall not be responsible for any postal delay about non-receipt /non-delivery of the bids or due to wrong addressee.

**SECTION-1**  
**Terms and Conditions**

1. The rates should be quoted for preferably FOR destination from supply within India.
2. The bidder shall indicate the excise duty exemption for the goods if applicable.
3. The rate quoted should be on unit basis. Taxes and other charges should be quoted separately, considering exemptions if any. The rate should be quoted in INR only
4. Rate quoted should be inclusive of Testing, commissioning and Installation of equipment and Training.
5. Payment: No advance payment will be made. Payment will be made only after the supply of the item in good and satisfactory condition and receipt of performance security by supplier.
6. Guarantee/Warranty period should be specified for the complete period should be specified in section 3 of this tender document.
7. Period requirement for the supply and installation of item should be specified in section 3 of this tender document.
8. In case of dispute, the matter will be subject to Mangalore Jurisdiction only.

**SECTION-2**  
**SCHEDULE OF REQUIREMENTS, SPECIFICATIONS AND ALLIED DETAILS**  
[ To be filled up by the Department / Centre of NITK, Surathkal ]

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Item(s) Name to be Procured : TurtleBot 3

Brief Specifications of the Item(s)  
(Attach Additional Sheet if necessary) : Additional Sheet Attached

Quantity : 01

Any other details / requirement : No

Warranty Period required : 01 Years

Delivery Schedule expected  
after placement of Purchase order  
(in Weeks) : 02 Weeks

**SECTION 3  
PRICE SCHEDULE**

[ To be used by the bidder for submission of the quotation]

- 
1. Item Name :
  2. Specifications  
(Conforming to Schedule of requirements  
Enclose additional sheets if necessary) :
  3. Currency and Unit Price :
  4. Quantity :
  5. Item Cost (Sl No. 3 \* Sl. No. 4 ) :
  6. Taxes and Other Charges :  
(i) Specify the type of taxes and duties  
in percentages and also in figures.  
(ii) Specify Other Charges in figures.
  7. **Warranty Period** :  
**(Conforming to the Schedule of  
requirements)**
  8. Delivery Schedule :  
(Conforming to the Schedule of requirements)
  9. Name and address of the Firm for  
placing purchase order :
  10. Name and address of Indian authorized  
agent ( in case of imports only) :

**Signature of the Bidder:** \_\_\_\_\_

**Name and Designation:** \_\_\_\_\_

**Business Address** : \_\_\_\_\_

\_\_\_\_\_

**Place:**

**Date:**

**Seal of the Bidder's Firm**

**SECTION 4**  
**CONTRACT FORM**

[ To be provided by the bidder in the business letter head]

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1. (Name of the Supplier's Firm) hereby abide by the delivery schedule mentioned in this document for supply of the items if the purchase order is awarded.
2. The item will be supplied conforming to the specifications stated in this document without any defect and deviations.
3. Warranty will be given for the period mentioned in this document and service will be rendered to the satisfaction of NITK, Surathkal during this period.

**Signature of the Bidder:** \_\_\_\_\_

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

**Business Address** : \_\_\_\_\_

\_\_\_\_\_

**Place :**

**Date :**

**Seal of the Bidder's Firm**

## Hardware specifications of turtlebot3 burger

| Serial number | Features                           | Specifications   |
|---------------|------------------------------------|--|
| 1             | Maximum translational velocity     | 0.22 m/s   |
| 2             | Maximum rotational velocity        | 2.84 rad/s (162.72 deg/s)  |
| 3             | Maximum payload                    | 15kg   |
| 4             | Size (L x W x H)                   | 138mm x 178mm x 192mm  |
| 5             | Weight (+ SBC + Battery + Sensors) | 1kg  |
| 6             | Threshold of climbing              | 10 mm or lower   |
| 7             | Expected operating time            | 2h 30m   |
| 8             | Expected charging time             | 2h 30m   |
| 9             | SBC (Single Board Computers)       | Raspberry Pi   |
| 10            | MCU                                | 32-bit ARM Cortex®-M7 with FPU (216 MHz, 462 DMIPS)                        |
| 11            | Remote Controller                  | -  |
| 12            | Actuator                           | XL430-W250   |
| 13            | LDS(Laser Distance Sensor)         | 360 Laser Distance Sensor <a href="#">LDS-01</a> or <a href="#">LDS-02</a> |
| 14            | Camera                             | -  |

|    |                      |   |
|----|----------------------|---|
| 15 | IMU                  | Gyroscope 3 Axis<br>Accelerometer 3 Axis                          |
| 16 | Power connectors     | 3.3V / 800mA<br>5V / 4A<br>12V / 1A                               |
| 17 | Expansion pins       | GPIO 18 pins<br>Arduino 32 pin                                    |
| 18 | Peripheral           | UART x3, CAN x1, SPI x1, I2C x1,<br>ADC x5, 5pin OLLO x4          |
| 19 | DYNAMIXEL ports      | RS485 x 3, TTL x 3  |
| 20 | Audio                | Several programmable beep<br>sequences                            |
| 21 | Programmable LEDs    | User LED x 4  |
| 22 | Status LEDs          | Board status LED x 1<br>Arduino LED x 1<br>Power LED x 1          |
| 23 | Buttons and Switches | Push buttons x 2, Reset button x 1,<br>Dip switch x 2             |
| 24 | Battery              | Lithium polymer 11.1V 1800mAh /<br>19.98Wh 5C                     |
| 25 | PC connection        | USB   |
| 26 | Firmware upgrade     | via USB / via JTAG  |
| 27 | Power adapter (SMPS) | Input : 100-240V, AC 50/60Hz,<br>1.5A @max<br>Output : 12V DC, 5A |



| <b>Serial number</b> | <b>Part name</b>          | <b>Sub part Name and dimensions</b>                 | <b>Number in quantity</b> |
|----------------------|---------------------------|---|---------------------------|
| <b>1</b>             | <b>Chassis Parts</b>      | Waffle Plate  | 8                         |
|                      | .                         | Plate Support M3x35mm                               | 4                         |
|                      | .                         | Plate Support M3x45mm                               | 10                        |
|                      | .                         | PCB Support   | 12                        |
|                      | .                         | Wheel   | 2                         |
|                      | .                         | Tire  | 2                         |
|                      | .                         | Ball Caster   | 1                         |
|                      | .                         | Camera Bracket                                      | 0                         |
| <b>2</b>             | <b>Motors</b>             | DYNAMIXEL ( <a href="#">XL430-W250-T</a> )          | 2                         |
|                      | .                         | DYNAMIXEL ( <a href="#">XM430-W210-T</a> )          | 0                         |
| <b>3</b>             | <b>Boards</b>             | <a href="#">OpenCR1.0</a>                           | 1                         |
|                      | .                         | *Raspberry Pi                                       | 1                         |
|                      | .                         | USB2LDS   | 1                         |
| <b>4</b>             | <b>Remote Controllers</b> | BT-410 Set (Bluetooth 4, BLE)                       | 0                         |
|                      | .                         | RC-100B (Remote Controller)                         | 0                         |
| <b>5</b>             | <b>Sensors</b>            | ** <a href="#">LDS-01</a> or <a href="#">LDS-02</a> | 1                         |

|           |                      |  |    |
|-----------|----------------------|--|----|
|           | .                    | <a href="#">Raspberry Pi Camera v2.1</a> | 0  |
| <b>6</b>  | <b>Memorys</b>       | MicroSD Card                             | 1  |
| <b>7</b>  | <b>Cables</b>        | Raspberry Pi Power Cable                 | 1  |
|           | .                    | Li-Po Battery Extension Cable            | 1  |
|           | .                    | DYNAMIXEL to OpenCR Cable                | 2  |
|           | .                    | USB Cable                                | 2  |
|           | .                    | Camera Cable                             | 0  |
| <b>8</b>  | <b>Powers</b>        | SMPS 12V5A                               | 1  |
|           | .                    | A/C Cord                                 | 1  |
|           | .                    | LIPO Battery 11.1V 1,800mAh              | 1  |
|           | .                    | LIPO Battery Charger                     | 1  |
| <b>9</b>  | <b>Tools</b>         | Screw driver                             | 1  |
|           | .                    | Rivet tool                               | 1  |
| <b>10</b> | <b>Miscellaneous</b> | PH_M2x4mm_K                              | 8  |
|           | .                    | PH_T2x6mm_K                              | 4  |
|           | .                    | PH_M2x12mm_K                             | 0  |
|           | .                    | PH_M2.5x8mm_K                            | 16 |

|  |   |                       |    |
|--|---|-----------------------|----|
|  | . | PH_M2.5x12mm_K        | 0  |
|  | . | PH_T2.6x12mm_K        | 16 |
|  | . | PH_M2.5x16mm_K        | 4  |
|  | . | PH_M3x8mm_K           | 44 |
|  | . | NUT_M2                | 0  |
|  | . | NUT_M2.5              | 20 |
|  | . | NUT_M3                | 16 |
|  | . | Rivet_1               | 14 |
|  | . | Rivet_2               | 2  |
|  | . | Spacer                | 4  |
|  | . | Silicone Spacer       | 0  |
|  | . | Bracket               | 5  |
|  | . | Adapter Plate         | 1  |
|  | . | Plate Support M3x35mm | 4  |
|  | . | Plate Support M3x45mm | 10 |