



Institute of Technology, Gopeshwar, The Director, Institute of Technology,
Gopeshwar, Kothiyalsain, Chamoli-246424, Uttarakhand

INVITATION LETTER

Package Code: TEQIP-III/2020/UK/iotg/204

Current Date: 23-Jan-2020

Package Name: ITG/GOODS/ROBOTICS LAB ECE/01

Method: Shopping Goods

To,

Sub: INVITATION LETTER FOR ITG/GOODS/ROBOTICS LAB ECE/01

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	ROBOTICS LAB	1	THE DIRECTOR, INSTITUTE OF TECHNOLOGY GOPESHWAR, KOTHIYAL SAIN CHAMOLI UTTARAKHAND (246424)	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 **45**days 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 Acceptance | 30 | 100 |
10. Liquidated Damages will be applied as per the below:
 Liquidated Damages Per Day Min %: 0.10
 Liquidated Damages Max %: 10

11. All supplied items are under warranty of **12** months from the date of successful acceptance of items and AMC/Others is **0**.
12. You are requested to provide your offer latest by **12:30** hours on **10-Feb-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: **0%**
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, **Institute of Technology, Gopeshwar, The Director, Institute of Technology, Gopeshwar, Kothiyalsain, Chamoli-246424, Uttarakhand**
19. We look forward to receiving your quotation and thank you for your interest in this project.

(Authorized Signatory)

Name & Designation

Annexure I

Sr. No	Item Name	Specifications												
1	ROBOTICS LAB	<u>Robotics Lab Requirements</u> <table border="1"><thead><tr><th>S. No.</th><th>Generic name of the Equipment along with make & model</th></tr></thead><tbody><tr><td>1.</td><td>01 Humanoid Robot** (specification attached separate)</td></tr><tr><td>2.</td><td>One external hard drive (6TB External Hard Drive Storage USB 3.0 File Backup and Storage)</td></tr><tr><td>3.</td><td>4 Microsoft Xbox Kinect Sensors</td></tr><tr><td>4.</td><td>Different Sensors (10 Pressure Sensor, 05 Gyroscope, 05 Accelerometer and rotation sensor), motors (10 Servo Motors) and 5 Arduino Board ,5 raspberry pi board)</td></tr><tr><td>5.</td><td>Online UPS for Laboratory of 10KVA (Specification attached)</td></tr></tbody></table>	S. No.	Generic name of the Equipment along with make & model	1.	01 Humanoid Robot** (specification attached separate)	2.	One external hard drive (6TB External Hard Drive Storage USB 3.0 File Backup and Storage)	3.	4 Microsoft Xbox Kinect Sensors	4.	Different Sensors (10 Pressure Sensor, 05 Gyroscope, 05 Accelerometer and rotation sensor), motors (10 Servo Motors) and 5 Arduino Board ,5 raspberry pi board)	5.	Online UPS for Laboratory of 10KVA (Specification attached)
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Technical specification for Programmable Humanoid Robot

Key features:

The Robot should have the following features:

- 1. Omni directional walking:** Humanoid Robot can walk on a variety of floor surfaces, such as tiled, and wooden floors.
- 2. Whole body motion:** The programmable Humanoid Robot's motion module should be based on generalized inverse kinematics, which handles Cartesian coordinates, joint control, balance, redundancy, and task priority.
- 3. Fall Manager:** The Robot should be able to shift its balance according to centre of mass and if fall is detected then it must be able to get up by itself.
- 4.** The Robot should be able for detecting and recognizing face, speech and shapes etc.

Construction details:

1. Dimensions:

Height(mm): 500mm or more

Depth(mm): 300 mm or more

Width (mm): 250 mm or more

2. Weight: less than 7 Kg.

3. Motors should not be visible.

Mother board:

1. Processor: Intel ATOM E3845 or Higher.

2. CPU Cache memory: 2MB or more.

3. Clock speed: More than 1.67 GHz

4. RAM: 4GB DDR3.

5. Flash memory: 32GB eMMC.

Power Supply:

1. Battery: Lithium-Ion type, Max charge / discharge current: 2.1 A / 2.0 A,

Energy: 62.5 Wh, Charging duration: less than 120 min,

Run time: 60 min (Active use), 90 min (Normal use) or more.

2. Battery Charger: Input: 100 to 240 VAC – 50/60 Hz – Max 1.2 A,

Output: 25.2 VDC – 2A.

The Charger must be compatible with the battery of robot. 15

Connectivity: Ethernet, WIFI (IEEE 802.11b/g/n), Bluetooth 4.0,

Software: Free, GUI based programming software, Compatible OS: Windows, Mac OS, Linux,

The following sample programs (editable) should be supplied with the Robot:

1. Home Position (Initial position): A sample motion in case of no command input.
2. Greeting: Bows/Hand Wave slowly and greet.
3. Walk: Slow, fast, Backward and forward walk sample.
4. Run: Run with adjustable speed.
5. Speak and voice listening command.
6. Hand Movement: Make hands move.
7. Jump, stand up, Sit down, etc.
8. And all other basic sample packages available for NAO 6 robot.

Human Interaction:

1. Automatic Speech and face detection and recognition system.
2. Omni directional microphones and loud speakers.
3. Good resolution cameras with wide field view which can support face recognition system.
4. Force sensitive sensors, Gyro sensor, tactile sensors, transmitter- receiver sensors, push buttons etc.

Degrees of Freedom: 25

1. Head:2,
2. Arms (in each): 5,
3. Pelvis:1,
4. Leg (in each): 5,
5. Hand (in each):1,

Warranty: Commercial Warranty of **2 years** applicable from date of installation. During the warranty period supplier will have to provide the services and part replacement against manufacturing defects.

Training Module: Robotic Training & Use Cases Development assistance

- Setting up NAO Robot
- Using Box libraries
- Robot application
- Using Speech Recognition
- Using Facial Recognition
- Use of Choreograph & timelines
- Create demo application & installation

Technical specification for Static Unit

- PROCESSOR - I7-8700
- RAM -16GB
- HARD DISK- 1TB
- SSD – 256 GB
- DVD

- GRAPHIC CARD - 4GB
- Windows -10Pro
- Choregraphe Suite License - Lifetime
- Warranty – 3 Years onsite

Technical specification for Mobile Unit

- PROCESSOR - I7-8750H
- RAM -16GB
- HARD DISK- 1TB SATA
- SSD - 256GB
- SCREEN – 15.6 Inch
- GRAPHIC CARD – NVIDIA QUADRO P600 4GB
- Windows -10Pro 64
- Choregraphe Suite License - Lifetime
- Warranty – 3 Years (On Site)

UPS Specifications

GENERIC

Rating in KVA (KVA)	10.0 KVA
Technology	IGBT-PWM with inbuilt isolation transformer
Input Power	Three phase 300 V - 450V sinewave,50Hz
Output power	Single phase 230V +/-1% sinewave 50 Hz
Backup time (Minutes)	30
Minimum VAH (VAH)	18720
Warranty for UPS (Years)	3
Movable trolley for Batteries	Without trolley but with rack
Warranty for battery	2
Degree of Protection	IP20
Cabling 5 meters for input and out put	With
Paralleling kit for synchronising	With

Installation and Commissioning	Yes
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CONSTRUCTIONAL

Minimum thickness of M.S.Sheet Enclosure duly painted (mm)	1.0
Type of Battery	SMF-VRLA conforming to JISC:8702(Pt.I,II&III)

FUNCTIONAL

Maximum overshoot and Under shoot of output rated voltage	4
Voltage Regulation from no load to full load (%)	< / = 3%
20% Overload limit for minimum 10 minutes	Yes
Overall Efficiency (%)	>/=90%
Total Harmonic Distortion (THD) (%)	Maximum 3%
50% Overload limit for minimum 1 minutes	Yes

QUALIFICATION CRITERION

Sr. No	General Specifications
1.	The Company should be certified by standard certification bodies ISO.
2.	GST Registration Certificate Photocopy
3.	Income Tax Clearance Certificate Last Three Year
4.	PAN Card Photocopy

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)
Total Cost							

Gross Total Cost (A+B): Rs. _____

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. _____ (Amount in figures) (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. _____