National Institute of Technology, Durgapur

Department of Computer Applications
M.G, Avenue, Durgapur, WB- 713209.

BID REFERENCE: **NITD/CA/RIG/SS/2016/Re/2** **Date - 02-09-2016**

To

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Dear Sir,

SUB **:** Procurement of "Environment Monitoring Devices/Peripherals" under the RIG of "**Dr. Sujoy Saha, Assistant Professor, Department of Computer Applications**" (Approval No. NITD/Regis/OR/FC/33/2016/dated 22nd Feb, 2016) as specified in **Annexure-II**.

You are invited to submit your most competitive quotation for the listed items as per **Annexure–II**. Price bid form as per **Annexure-I** must be filled with complete numerical values.

1. **Bid Price (Annexure-I)**
   a. The contract shall be for the full quantity as described above. Corrections, if any, shall be made by crossing out, initialing, dating and rewriting.
   b. All duties, taxes and other levies payable by the contractor under the contract shall be included in the total price **F.O.R. NIT Durgapur**.
   c. The rates quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
   d. The bid price must be quoted in **Indian Rupees.**

2. Each bidder shall submit only one quotation for each item.

3. The bid submitted by the bidder must comprise the following:
   i. Detailed technical specifications, conforming to the given specifications (vide Annexure – I), and literature /drawings /manuals of the Items/services to be supplied
   ii. Warranty period
   iii. Valid sales-tax / VAT clearance certificate
   iv. Price bid as per Annexure-I

4. **Validity of Quotation**
   a. Quotation shall remain valid for a period not less than 60 days after the deadline date specified for submission.

5. **Evaluation of Quotations**
   a. The Purchaser will evaluate and compare the quotations based on all of the items and determined to be substantially responsive i.e.
      i. which are properly signed and
      ii. conform to the terms and conditions, and specifications.
      iii. Quoted all items.

6. **Award of contract**
   a. The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive, technologically acceptable and who has offered the lowest evaluated quotation price.

   b. 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.

c. 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.

7. Delivery shall be made at **Department of Computer Applications, NIT, Durgapur**

8. Payment shall be made immediately within 30 days after satisfactory installation, commissioning and acceptance of the Item.

9. Comprehensive onsite warranty shall be applicable to the supplied Items (wherever applicable) for a period of minimum **12 months** from the date of installation.

10. The Institute is **exempted from payment of custom and excise duty** on items mentioned below:

1. Scientific and technical instruments, apparatus, equipment (including computers)
2. Accessories, spare parts and consumables thereof
3. Computer software, CD-ROM, recorded magnetic tapes, microfilms, and microchips.

11. Liquidated Damage will be applicable at the rate of 0.5% per week. The purchaser has the right to cancel the purchase order when LD accumulates to 10%.

12. Settlement of any dispute will be made under the jurisdiction of Durgapur Court.

13. You are requested to provide your offer latest by **03.00 PM on September 20, 2016. Bid opening will be on the same day at 4:00 PM.**

14. The bid document must be signed and sealed and enclosed with the bid as a token of acceptance of all terms and conditions in the bid document by the bidder.

15. The items must be delivered within **60 days**from the date of placement of purchase order at the respective department.

16. All other terms and conditions of GFR 2005 of the Government of India will be application.

I look forward to receiving your quotations and thank you for your interest in this project.

The bid must be addressed to:

(Dr. Sujoy Saha)
Department of Computer Applications
NIT, Durgapur -713209, W.B.

Annexure – I

PRICE BID

1	2	3	4		5	6	7	8
Sl. No	Name of the Item	Quantity & Unit	Price for each unit		Unit Price (a)+(b)	Sales tax/ VAT & other taxes payable [admissible only on col. 4(a)]	Total Unit Price (5)+(6)	Total Unit Price (in words)
			Ex-factor/ ex-warehouse/ ex-showroom/ off the shelf (a)	Incidental Services (b)				

Annexure – II

(Environment Monitoring)

Sl No.	Device Name	Specification	Total Number
1	SO2 Sensor with breakout board	Heating voltage: 5 + 0.2V (AC . DC), Working current: 150mA, Circuit voltage: DC5V (Max DC 24V), Concentration range :1-500ppm, Response time: < 1S (3-5 minute warm-up, the theory preheating time 48 hours), Working temperature: -10 ~ 50 oC (nominal temperature 20 oC), Humidity: 95% RH (nominal humidity 65% RH)	4
2	PM 2.5/10/1 Sensor with Sensor Adapter, cable	Voltage:4.95 ~ 5.05V, Maximum electric current: 120mA, Measuring pm diameter：0.3~1.0、1.0~2.5、2.5~10（um, Measuring pm range：0~500 ug/m3, Standby Current： ≤200 uA, Response time： ≤10 s, Operating temperature range:: -20 ~ 50C, Operating humidity range: 0 ~ 99% RH, Maximum size: 65 × 42 × 23 (mm), MTBF: > = 5 years	5
3	NOx, CO Sensor with cable and breakout board	Voltage:4.95 ~ 5.05V, Maximum electric current: 120mA, Measuring pm diameter：0.3~1.0、1.0~2.5、2.5~10（um, Measuring pm range：0~500 ug/m3, Standby Current： ≤200 uA, Response time： ≤10 s, Operating temperature range:: -20 ~ 50C, Operating humidity range: 0 ~ 99% RH Maximum size: 65 × 42 × 23 (mm), MTBF: > = 5 years	4
4	Enclosure	Weather Proof	1
5	GPS with Antena, SMA Connector	-165 dBm sensitivity, 10 Hz updates, 66 channels 5V friendly design and only 20mA current draw Breadboard friendly + two mounting holes RTC battery-compatible Built-in datalogging PPS output on fix >25Km altitude Internal patch antenna + u.FL connector for external active antenna Fix status LED	2
6	Converter with charger	Dc to DC converter, output 5V, current = 2 A	3
7	Microcontroller	Operating Voltage: 3.3V, Recommended Input Voltage: 7-12V, Min-Max Input Voltage: 6-20V, Digital I/O Pins: 54 (of which 12 provide PWM output), Analog Input Pins: 12, Analog Outputs Pins: 2, Total DC Output Current on all I/O lines: 130 mA, DC Current for 3.3V Pin: 800 mA, DC Current for 5V Pin: 800 mA, Flash Memory: 512 KB all available for the user applications, SRAM: 96 KB (two banks: 64KB and 32KB), Clock Speed: 84 MHz.	6
8	Power Hub for 3G Dongle	Power Hub for 3G Dongle	5
9	3G Dongle	3G Connectivity	3
10	Microcomputer	CPU: 4× ARM Cortex-A53, 1.2GHz or higher GPU: Broadcom VideoCore IV RAM: 1GB LPDDR2 (900 MHz) or higher Networking: 10/100 Ethernet, 2.4GHz 802.11n wireless Bluetooth: Bluetooth 4.1 Classic, Bluetooth Low Energy Storage: microSD GPIO: 40-pin header, populated Ports: HDMI, 3.5mm analogue audio-video jack, 4× USB 2.0, Ethernet, Camera Serial Interface (CSI), Display Serial Interface (DSI)	5
11	SD Card Shield	Good quality SD card Shield for Microcontroller	10

12	SD Card	8 GB SD CARD or higher	20
13	RTC	Two wire I2C interface, Hour : Minutes : Seconds AM/PM Day Month, Date – Year, Leap year compensation, Accurate calendar up to year 2100, Battery backup included, 1Hz output pin, 56 Bytes of Non-volatile memory available to user, 0x68 I2C Address	10
14	Embedded PCB Board for Sensor & Calibration	Sensor Interface PCB Board and calibration of Environment sensor	6
15	Humidity & Temperature	**Wide operating voltage range**:(3.3V ~ 5V), **Low Power Consumption:**350 µA during RH conversion, **0 to 100% RH operating range, Measuring Range:** Humidity: 0% - 80% RH Temperature: 0 ~ 70 °C, **Accuracy:** Humidity: ±4.5% RH, Temperature: ±0.5°C	6
16	GPS and 3G Unit (Combined Shield)	GPS and 3G Integrated board for Raspberry Pi 3	1
17	Base Shield	Connector for Interfacing Grove Sensors	5
18	Weather Shield	Weather Shield (Measure Humidity, Temp, Rail Fall, Wind Direction etc.)	1
19	high-end CO Sensor with breakout board (ISO 9001:2008 standard)	Sensitivity nA/ppm at 2ppm CO 420 to 650 Response time t90 (s) from zero to 2ppm NO2 < 25 Zero current nA in zero air at 20°C +30 to -130 Noise* ±2 standard deviations (ppb equivalent) 4 Range ppm NO2 limit of performance warranty 1000 Linearity ppb error at full scale, linear at zero and 5ppm NO2 20 to 35 Overgas limit maximum ppm for stable response to gas pulse 2000	1
20	High-end No2 Sensor with breakout board (ISO 9001:2008 standard)	Sensitivity nA/ppm at 2ppm NO2 175 to -450 Response time t90 (s) from zero to 2ppm NO2 < 60 Zero current nA in zero air at 20°C -50 to +70 Noise* ±2 standard deviations (ppb equivalent) 15 Range ppm NO2 limit of performance warranty 20 Linearity ppb error at full scale, linear at zero and 5ppm NO2 < ±0.5 Overgas limit maximum ppm for stable response to gas pulse 50	1
21.	High-end SO2 Sensor with breakout board (ISO 9001:2008 standard)	Sensitivity nA/ppm at 2ppm SO2 275 to -475 Response time t90 (s) from zero to 2ppm SO2 < 30 Zero current nA in zero air at 20°C -80 to +80 Noise* ±2 standard deviations (ppb equivalent) 100 Range ppm NO2 limit of performance warranty 20 Linearity ppb error at 100ppm SO2 , linear at zero and 10ppm SO2 0 to -2 Overgas limit maximum ppm for stable response to gas pulse 200	1