Indian Institute of Technology Madras
Chennai-600 036
Department of Civil Engineerin

Ref No: CIE/2015/ Data Loggig/SPL

dated 15.6.2015

To

DUE DATE : 10.07.2015

Sir/Madam,

1. Quotations are invited **in duplicate (Two bidding covers)**for the **item/s shown as per enclosed Specifications**.

2. The quotations duly sealed and superscribed on the envelope with the enquiry reference No. & due date should be addressed to the **Head of the Department, and contain in 2 bid system i.e. Technical bid and Commercial bid in two separate envelopes and these two envelopes should be enclosed in a Single envelope so as to reach on or before the due date.**

3. The quotation should be valid for **(60) Sixty days from the due date and period of delivery time** required.

4. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the quotations, **wherever applicable**. Samples if called for, submitted free of charge and collected back at the suppliers expenses.

5. Firms outside Chennai: Quotations should be for F.O.R. Chennai. If F.O.R. consignor station, freight charges by passenger train/lorry transport must be indicated. If Ex-godown, packing Forwarding and Freight charges must be indicated.

6. Local Firms: Quotations should be for free delivery to this Institute. If quotations are for Ex-godown, delivery charges should be indicated separately.

7. Goods should be **supplied** by **carriage paid and insured**.

8. Goods shall not be supplied **without an official supply order**.

9. PAYMENT: The mode of payment should be mentioned.

10. Rate of Sales/General Taxes and percent of such other taxes legally leviable and intended to be claimed should be distinctly shown along with the price quoted. Wherever this is not done, no claim for any taxes will be admitted at any stage and any ground whatsoever. The taxes leviable should take into consideration that we are entitled to have Concessional Sales Tax applicable to Non-Government Educational Institutions run with no profit motive for which a concession. Sales Tax Certificates will be issued at the time of final settlement of the bill. The Price should be quoted without Excise Duty, Since IIT Madras is exempt from payment of Excise duty.

11. Warranty period: Explicitly Warranty period is to be given by the firms.

Yours sincerely

For Head of the Department

Specifications of a datalogging system for light and heat measurements:

The vendor should supply the specified number of the following items to Civil Engineering department, IIT Madras. The quotation should be valid for four months. The items should be delivered within three months of issuing the purchase order.

1. IR eval board - (120 numbers)

The IR eval board should use Melexis MLX90614 IR Thermometer or equivalent. The sensor should be connected to an ATmega328 processor or equivalent. The code for reading the temperature and printing its value in Centigrade to the Serial interface should be loaded into the processor by the vendor. It should be possible to read the printed values from an Arduino controller using the standard Serial interface. The source code should be provided and it should be possible to modify and upload the code to the processor through the Arduino environment. The procedure for compiling the code and uploading to the processor should be clearly documented and should be demonstrated. See https://www.sparkfun.com/products/10740 for an example of an IR eval board.

2. BH1750 Light sensors - (120 numbers)

The BH1750 light intensity sensor breakout board with a 16 bit AD converter built-in is used to directly output the lux values to be read by an Arduino controller. See http://www.dfrobot.com/index.php?route=product/product&product_id=531#.VXGlUs-qpBc

3. Temperature Sensor - (120 numbers)

The temperature sensor should produce analog output linearly proportional to the temperature. The output should be easily read from an Arduino controller by connecting to an analog input pin. See for example:

http://www.ti.com/lit/ds/symlink/lm35.pdf

4. Arduino Pro Mini - (120 numbers)

The Arduino Pro Mini is a microcontroller board based on the ATmega328. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, an on-board resonator, a reset button, and holes for mounting pin headers. A six pin header can be connected to an FTDI cable or Sparkfun breakout board to provide USB power and communication to the board. (http://www.arduino.cc/en/Main/ArduinoBoardProMini)

5. Arduino Mega 2560 - (15 numbers)

The Arduino Mega 2560 is a microcontroller board based on the ATmega2560 (datasheet). It has 54 digital input/output pins (of which 15 can be used as PWM outputs), 16 analog inputs, 4 UARTs (hardware serial ports), a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller. (http://www.arduino.cc/en/Main/ArduinoBoardMega2560)

6. USB hub 10 port - (15 numbers)

Connector Type: USB 2.0

10 number of ports

Transmission Rate: 480Mbps

Supports Systems Windows XP or above

Each port power supply up to 500mA

With appropriate power supply and working indicator

7. USB 2.0 to TTL UART SERIAL CONVERTER MODULE - (120 numbers)

USB2.0 Full Speed IC offering a basic UART to USB bridge in a compact package; No USB specific firmware programming required. See for example:

https://www.sparkfun.com/products/9716

8. 12V Power supply - (34 numbers)

AC-to-DC adapter to convert from 220 V AC to 12 V DC for providing external power to Arduino Mega 2560 controllers

9. Network switch - 24 port - (2 numbers)

The network switch should be capable of connecting up to 24 computers using LAN cables. It should have 48Gbps forwarding capacity. Network Protocol and Standards: IEEE 802.3 Ethernet, 802.3u Fast Ethernet, 802.3x Flow Control, 802.3ab Gigabit Ethernet. It should work on 220 V AC Power Supply.

10. Ethernet cables - (30 numbers)

CAT 5E cables suitable for Ethernet networks running at 10Mbps, 100Mbps. Length 3 m or higher.

11. USB cables - (240 numbers)

Standard USB 2.0 A To B cables for connecting peripheral USB devices.

12. Xbee XB24-Z7WIT-004 - (240 numbers)

Zigbee / 802.15.4 Modules XBee ZB w/WiredWhip AT Router F/W. See for details:

http://www.digikey.com/product-detail/en/XB24-Z7WIT-004/602-1098-ND/1942304

13. XBee XBP24-BZ7WIT-004 - (30 numbers)

See for details:

http://www.digikey.com/product-detail/en/XBP24BZ7WIT-004/602-1181-ND/2344902