

GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
INDIAN INSTITUTE OF REMOTE SENSING  
IIRS  
DEHRADUN  
PURCHASE & STORES  
INVITATION TO TENDER

Ph No: 0135 - 2524317  
Fax 0135 - 2528041  
Email: pns@iirs.gov.in

Date :07/10/2013

M/s

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Our Ref No : GIER 2013-000246-01

Tender Due: 15:00 Hrs ISTon 29/10/2013

Dear Sirs,

Please submit your sealed quotation , in the Tender Form enclosed here along with the descriptive catalogues / pamphlets /literature ,superscribed with Our Ref.No. and Due Date for the supply of the following items as per the terms & conditions mentioned in Annexure( Form No: )

S.No.	Description of Items with Specifications	Unit	Quantity
1	Automatic Weather Station (AWS), Specification as per Annexure-I enclosed)	Set	6
2	Mast for Automatic Weather Station (6 m height)	Set	2

DELIVERY AT: IIRS  
MODE OF DESPATCH DOOR DLVRY  
DUTY EXEMPTIONS  
SPECIAL INSTRUCTIONS NIL  
SPECIFIC TERMS

*(Signature)*  
7/10/13

V.V. NARAYANAN KUTTY  
PURS. & STORES OFFICER  
For and on behalf of the President of India  
The Purchaser

o/c

## ANNEXURE-I: AWS INSTRUMENTS SPECIFICATIONS

### 1) AIR TEMP & RH SENSOR ①

#### a) Air Temperature

- Measurement Range: -40° to +70°C
- Measurement resolution:  $\pm 0.01^\circ\text{C}$
- Temperature Accuracy:  $\pm 0.5^\circ\text{C}$

#### b) Relative Humidity

- Operating range: 0 to 100% RH
- Accuracy :  $\pm 1\%$  RH
- Typical Long-Term Stability: Better than  $\pm 1\%$  RH per year

#### General

Supply Voltage: 6 to 28 VDC

Current consumption less than 4mA

Response Time : less than 20s

### 2) WIND DIRECTION AND WIND SPEED SENSOR ②

#### a) Wind Direction Sensor Details

- Operating Range: 360° mechanical; 352° electrical (8° open)
- Accuracy:  $\pm 5^\circ$
- Damping Ratio: 0.2

#### b) Wind Speed Sensor Details

- Range : 0-50 m/s
- Accuracy: 0.2 m/s
- Resolution: 0.1 m/s
- Starting Threshold: 0.5 m s-1

### 3) Digital SUNSHINE RECORDER

### 4) RAIN FALL SENSOR

- Sensor type : Tipping bucket/ magnetic reed switch
- Material : Anodized aluminum
- Temperature: 0° to +50°C
- Rainfall per tip: 0.1mm

### ENCLOSURE

1. 12" x 14" Enclosure suitable for datalogger with a power supply and one or more peripherals
2. NEMA 4X Enclosures
3. Non Corrosive, white with UV stabilized
4. Cable entry options One sealable conduit

### POWERSUPPLY

1. Voltage Regulator for Charging the battery from Solar Panel and giving voltage to Datalogger
2. SMF Battery 12V, 7.2 AH
3. Solar Panel of 10Watts

### SOLAR RADIATION SENSOR (Optional item for shortwave radiation)

- Measurement range: 0 to 2000 W m
- Output: 0.2 mV per W m-2
- Light spectrum waveband: 300 to 3000 nm
- Absolute accuracy: 5% for daily total radiation
- Long-term stability: <2% per year
- Operating temperature: -40° to +55°C

All instruments should be compatible with data logger specified in Annexure -II

③  
④  
5) Mast/Tower (6m height) for two (2) AWS locations for avoiding heavy snow conditions.

# ANNEXURE - II.

## Weather Station Data Logger Specifications

### 1. INTRODUCTION

The remote Automatic Snow and Meteorological Monitoring Station will constitute of a **fully developed and established** Datalogger system, with rechargeable battery, solar panels, charge controller, meteorological and snow sensors, 3 meter meteorological tower and accessories.

The system should incorporate the latest state-of-the-art technology and must consume very low power. Since the remote station will have to operate under stringent weather conditions in snow bound regions, the system should be rugged and hermetically sealed to avoid ingress of snow and moisture.

### 2. DATA LOGGER

#### 2.1. General features

- The Datalogger should be microprocessor based. There should be a facility to configure the Datalogger as per the requirement in the field with Display and Keypad and Laptop.
- The design of the Datalogger should be modular and the replacement of the modules should be easy and user friendly.
- The Datalogger should have least tuning parts (preferably none) and should provide consistent performance for at least 5 years.
- The Datalogger should be enclosed in a NEMA-IV enclosure made of composite material.
- All the connections from or to the Datalogger should be inside the NEMA-IV enclosure.
- Keeping in view the low temperature conditions in the field, there should be a provision for quick and easy replacement of the Datalogger from the NEMA-IV enclosure. The mounting / dismounting of the Datalogger in the enclosure should be with the help of latches. Further, it should be possible to lock/unlock these latches with gloves-in-hand.
- The DCP and sensors will be mounted on an 3 meter triangular tower, which should cater for fitment of assemblies for sensors, DCP, and other accessories. The tower will have multi sections. The tower should be light as well as robust enough to withstand weight of at least two persons (200 Kgs). This tower with complete accessories will be part of the supplies.
- The complete technical manual, user manual and specially developed software's (if any) source code should be provided.

- It should be possible to integrate the sensors of any other make with Analog/Frequency/Counter/SDI-12/RS 232 port of data logger. Company will help the users to configure the datalogger as per the requirement.

## **2.2. Technical Specifications**

### **2.2.1. Data Inputs**

- Analog: 6 channels
- Input range: The datalogger should have multiple input ranges along with "AutoRanging" facility to measure the sensors accurately without any loss of accuracy. The datalogger should have these input ranges:  $\pm 5000\text{mV}$ ,  $\pm 2500\text{mV}$ ,  $\pm 250\text{mV}$ ,  $\pm 25\text{mV}$ ,  $\pm 7.5\text{mV}$ ,  $\pm 2.5\text{mV}$ ; 0 to 5V DC
- Digital: Frequency Type: 03 channels; Counter Type: 02 channels. The facility to convert counter channels to frequency channels & vice versa will be provided.
- SDI-12 Input: 02 Channels

### **2.2.2. Analog to Digital Conversion**

- Resolution: (12 Bit) or more
- Conversion Accuracy  $\pm 1$  LSB
- The DCP should have watchdog timer to reset the system and restore the previous set-up case of microprocessor resets and power glitch.

### **2.2.3. Real Time Clock**

- The normal time clock of the system should be derived from TCXO with accuracy of 1.0 ppm/yr.
- In addition the system should also have battery backed real time clock so that the time is updated even during power failure.
- The accuracy of this clock should be better than 10 seconds in six-months periods.

### **2.2.4. RS 232C- Port**

- The DCP should have an RS 232-C port capable of having communication with external devices. Also it should be possible to configure the port through software.
- Data logger should be compatible with GSM/GPRS/CDMA/Argos based telemetry system

### **2.2.5. Data Storage**

- The system should have inbuilt facility to store 20 hourly data points for minimum duration of one year. It should also be possible to download the stored data on Flash card including date, time and station information.

### **2.2.6. Power Requirements**

- Typical Current Drain in Sleep Mode: ~0.6 mA or better
- 1 Hz Scan (3 diff. meas., 60 Hz rej., 2 pulse meas.): 5 mA
- Short circuit and over load protection.

### **2.2.7. Weight**

- Data logger should be less than 2 kgs. Weight of battery and NEMA-IV enclosure is excluded.

## **3. BATTERY & SOLAR CHARGING SYSTEM**

- The capacity of the battery should be decided by the firm to keep the Datalogger with sensors operational for 10 no-sunshine days. Battery of 12V/80AH will be desirable. The effect of sub zero operating conditions (-40°C) in the field shall be taken into account. Vendor will provide power budget calculations and performance characteristics of battery at -40°C.
- The vendors will quote for sealed maintenance free (SMF) value regulated lead acid (VRLA ) battery of such a size .
- The capacity of solar panel should be such that the battery can be charged with 30% to 50% sunshine. It is mentioned that 6 hours clear sunshine will be available for one or two days in a month. This aspect will be taken in account in the power budget calculations
- A suitable in-built charge controller having over and under voltage protection should be provided in the DCP.

## TELEMETRY SYSTEMS FOR AWS

### A) GSM/CDMA/GPRS based Telemetry:

The wireless terminal (GSM/GPRS Modem) to be provided should be a general purpose intelligent device for various remote monitoring applications. This Modem should be connected to Data Logger for transporting data to the web.

#### Features of GSM/GPRS Modem

- a) A GSM/GPRS enabled SIM is supposed to be installed in the Terminal. Based on the Operator; the GPRS settings have to be configured in the terminal.
- b) Once a proper SIM card is inserted and the terminal is switched ON, it will register to the GSM/GPRS network using public APN.
- c) The terminal should continuously monitor port for messages received from the device connected.
- d) When modem receives a valid command in the port it should upload the data to a web server in HTTP protocol.

### B) Argos based Telemetry:

- a) Data logger should be compatible with ARGOS based satellite telemetry for real time data transfer for remote locations where GSM/CDM/GPRS based telemetry is not feasible.
- b) The Argos system should consist of the Argos-Certified Transmitter, a synchronous interface and cable, a test receiver.

Quote separately for **GSM/CDMA/GPRS** and **Argos** based telemetry systems

## **TERMS AND CONDITIONS**

1. The entire AWS System should be supplied with all accessories and should be installed by the vendor at sites decided by IIRS. The system should be made full operational on turn-key basis including all communication devices/charges for a period of three years.
2. Communication- In case GPRS/GSM network is not available; the system should store data in the data logger/flash card with 15 min. interval (Industrial grade) for at least 6 months, which can be retrieved at regular interval perfectly through flash cards (industrial Grade).
3. Data logging interval would be from 5 minutes to one hour. Fencing and site preparation charges are to be included in the total cost. Full warranty and AMC of all instruments of AWS is to be provided for first year. Comprehensive AMC along with full warranty is to be provided for a period of next three years and is to be quoted separately.
4. In case of any manufacturing and replacement of parts, it has to be replaced with similar or higher standard spare parts. Calibration certificate of data logger and other instruments should be provided.
5. Quote separately for spare parts and mention their availability for at least 5 years.

### **MPR Opening Statement**

Supply, installation and operationalization of AWS as per the Specification and condition enclosed on Annexure-1.

**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
INDIAN SPACE RESEARCH ORGANISATION  
INDIAN INSTITUTE OF REMOTE SENSING  
4 KALIDAS ROAD, POST BOX NO.135  
DEHRA DUN.**

**ADDITIONAL TERMS & CONDITIONS TO TENDER ENQUIRY NO.IIRS/P&S/GIER-2013-000246-01**

1. Offers should be sent to the following address in a sealed cover duly superscribing the Tender Enquiry number and due date on the cover. Separate covers should be used for submitting offers against different Tender Enquiries.

Purchase & Stores Officer,  
Indian Institute of Remote Sensing  
No. 4, Kalidas Road, Post Box No. 135  
Dehradun- 248001  
Phone No. 0135-2524317/4318  
Fax No. 135-2748041

2. In case the tenderer is not interested to participate in the tender, the tenderer should send a regret letter giving reasons, failing which future enquiries will not be sent.
3. **In order to avail of the benefits extended by Govt. of India to the Micro and Small Sectors, please submit attested copy of the valid Entrepreneur Memorandum Part-II signed by the General Manager, District Industries Centre or NSIC Registration Certificate alongwith your officer**
4. **High Sea Sales - Against High Sea Sale transactions:**
  - a. Offers shall be on all inclusive basis including delivery upto Sriharikota at the risk and cost of the supplier. Customs Clearance is the responsibility of the supplier and at his cost and risk.
  - b. 100% payment will be made within 30 days after receipt and acceptance of the items at our site. However, in exceptional cases based on merits of the case, 100% payment against delivery and satisfactory inspection at our site may be considered.
  - c. Sales Tax is not applicable
  - d. Customs Duty Exemption Certificate and other relevant documents required for Customs clearance will be provided.
  - e. High Sea Sales Agreement furnished by the supplier in accordance with the terms and conditions of our purchase order will be signed and issued by IIRS.

5. **SPECIAL CONDITIONS FOR SUBMITTING QUOTATIONS IN FOREIGN CURRENCY BY THE INDIAN AGENTS**

The Tenderer should submit the following documents/information while quoting:-

- a) Foreign Principal's proforma invoice indicating the commission payable to the Indian Agent and nature of after sales service to be rendered by the Indian Agent.
  - b) Copy of Agency agreement with the Foreign Principal, precise relationship between them and their mutual interest in the business.
6. **Advance Payment** - Wherever advance payment is requested, Bank Guarantee from any Nationalized Bank should be furnished.



7. **Liquidated Damages** - In all cases, where advance payment is involved and where delivery is critical Liquidated Damages clause will be applicable at 0.5% per week or part thereof subject to a maximum of 10% of total order value.
8. **Performance Bank Guarantee** - Wherever called for Performance Bank Guarantee for 10% of the order value should be furnished covering the warranty period.
9. The delivery period mentioned in the tender enquiry, **IF ANY**, is with the stipulation that no credit will be given for earlier deliveries and offers with delivery beyond the period will be treated as unresponsive.
10. The Department will have the option to consider more than one source of supply and final orders will be given accordingly.
11. The bidders should note that conditional discounts would not have edge in the evaluation process of tenders.
12. Non-acceptance of any conditions wherever called for related to Guarantee/ Warranty, Performance Bank Guarantee, Liquidated damages are liable for disqualification.
13. Wherever installation/ commissioning involved, the guarantee/warranty period should reckon only from the date of installation and commissioning.
14. The following information/ documents are to be furnished wherever applicable.
  1. Product Literature
  2. Core banking account number of SBI
  3. PAN No. in quotation and invoices
  4. Excise Duty, VAT, Service Tax Registration details.

  
9/10/13

**Purchase & Stores Officer**

**GOVERNMENT OF INDIA  
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INDIAN SPACE RESEARCH ORGANISATION  
INDIAN INSTITUTE OF REMOTE SENSING  
4 KALIDAS ROAD, POST BOX NO.135  
DEHRA DUN**

**GENERAL TERMS & CONDITION AGAINST MPR- 2013000246/ for supply of Automatic  
Weather Station (AWS)**

1. Quotation should be submitted in a sealed envelope super scribing our tender No. & due date and sender Name with full address including telephone No/Fax Number.
2. **Specifications:** Item should be offered strictly confirming to our specifications. The deviation in specifications, if any shall be clearly indicated in the quotation. The make/type & Model No. of item should be indicated in the quotation.
3. **Terms of Price :** Quotation should be submitted on F.O.R Destination price including transit insurance. Preference will be given to those tenders offering supplies from ready stock and on F.O.R. Destination basis/Delivery at site. Ex-Works, Ex-Go down/F.O.R Dispatching station, the approximate packing, forwarding charges and freight should be indicated by the supplier.
4. **Validity:** The quotation should be valid for a minimum period of 90 days from the date of opening the bids
5. **CST -** With effect from 01.04.2007, Form-D has been withdrawn for Inter-State purchases by Government Departments. Now the percentage of CST on the Inter-State sales to Government Departments shall be the percentage of VAT/State Sales Tax as applicable in the State of the Seller/Dealer. Accordingly, the suppliers have to indicate clearly the % of CST applicable against each case in their offers.
6. The Tenders received on or before the due date and time including the tenders received by fax on the above fax number will only be considered as valid tenders. **Fax offers in case of two-part tenders will not be considered**
7. **Customs Duty -** IIRS is eligible for **Customs Duty exemption** as per Notification No. 51/96 dated 23/6/1996 as amended by Notification No. 24/2007 dated 01.03.2007 and amended by 12/2012, dated: 17.03.2013 . This may be taken into account while quoting for import items, if any.
8. In case tenderers offering items considering customs duty exemption, they should also indicate the price, separately, with Customs Duty component and terms and conditions thereto
9. **Delivery Period:** Specific delivery period should be specified in your quote. **If item ordered are not delivered within the stipulated delivery period, Liquidated Damages will be levied @ 0.5% of the value per week or part of a week subject to a maximum of 10% of the total value of goods or 10% value of goods that could not be put to use due to late supply, whichever is lower.**

10. **Payment:** Our normal payment terms are: Within 30 days from the date of receipt and acceptance of the materials for orders value Rs. 2.0 Lakhs. For order value above Rs. 2.0 Lakhs, 90% payment within 30 days and 10% against Bank Guarantee for the warranty period.
11. In case of imported stores “ Sight Draft through SBI, providing for 90% of invoice value at sight on presentation of documents and balance 10% payment will be made upon expiry of warranty period or against Bank Guarantee for a like amount on a nationalized bank in the text prescribed by IIRS.
12. In case of imported stores, both FOB and CIF prices upto Indian Port of entry viz. New Delhi should be indicated.
13. Indian Agent’s commission if any, and the percentage included in the quoted prices should be indicated in case of imported stores.
14. Warranty: Warranty period should be clearly indicated in your quote.
15. Literate/ Technical data should accompany with the quotation.
16. Item should be delivered, Installed at Indian Institute of Remote Sensing(IIRS) 4 Kalidas Road, Dehra Dun,
17. Director , IIRS reserve the right to accept or reject any quotation in full or part thereof without assigning any reasons.

  
Purchase & Store Officer