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भारत सरकार

GOVERNMENT OF INDIA

जल संसाधन, नदी विकास और गंगा संरक्षण मंत्रालय

Ministry of Water Resources, River Development and Ganga Rejuvenation

केन्द्रीय जल और विद्युत अनुसंधान शाला

Central Water & Power Research Station

खड़कवासला, पुणे - 411 024

Khadakwasla, Pune – 411 024

**TENDER DOCUMENT
(E-PROCUREMENT MODE)**

FOR

**Supply, Installation, Testing and Commissioning of
Automatic Weather Station, Datalogger-Telemetry
under NHP for CWPRS, Pune -24**

[Two Envelope with e-Bidding]



Government of India
Ministry of Water Resources, RD & GR
Central Water & Power Research Station
Khadakwasla, Pune-411024

Fax: 020-24381004, Telephones: 020-24103220 Email: cpc.cwprs-pune@gov.in, Web: www.cwprs.gov.in

e- Notice Invite Tender

File No. CWPRS/CPC/AAO(P)/NHP/107/2018/

Dated: 16.11.2018

The Scientist-C, Construction and Procurement Cell, CWPRS, Pune, India on behalf of President of India invites online e-tenders through the website <http://eprocure.gov.in/eprocure/app> under **Two bids** system from eligible and qualified bidders for the supply of following goods:

NIT No.	107/2018-19
Name of the Item/Goods	Supply, Installation, Testing and Commissioning of Automatic Weather Station, Datalogger-Telemetry under NHP for CWPRS, Pune -24
Earnest Money Deposit (EMD)/Bid Security	Amount: Rs. 65,500/-
	Validity : 120 days + 45 days
Date of release of Tender through e-procurement Portal http://eprocure.gov.in/eprocure/app	16.11.2018 at 18.00 hrs.
Date & Time of Pre bid meeting	29.11.2018 at 1500 hrs
Last date for seeking clarification if any. (online only i.e through e-mail)	10.12.2018 up to 17:00 hrs
Last date & time for submission of online bid through e-procurement Portal http://eprocure.gov.in/eprocure/app	17.12.2018 up to 11.00 hrs.
Date & time for opening of technical bid (online) through e-procurement Portal http://eprocure.gov.in/eprocure/app	20.12.2018 at 11.00 hrs.
Date & time for opening of financial bid (online) through e-procurement Portal http://eprocure.gov.in/eprocure/app	To be notified later.
Validity period of Bid	120 days
Delivery Period of the items / Goods	90 days from date of issue of Contract Agreement
Officer Inviting Bids	The Scientist – C, Construction & Procurement Cell (CPC), Central Water & Power Research Station, Khadakwasla, Pune-411024

1. Bid Documents can be downloaded from CWPRS website <http://www.cwprs.gov.in> or from the Central Public Procurement Portal <http://eprocure.gov.in/eprocure/app> free of cost.
2. Bidders should enroll/register in the e-procurement module of Central Public Procurement Portal through the website <http://eprocure.gov.in/eprocure/app> for participating in the bidding process.
3. Bidders should also possess a valid Digital Signature Certificate (DSC) of Class III for online submission of bids.
4. Bids received on CPP portal (<http://eprocure.gov.in/eprocure/app>) only will be considered. Bids in any other form sent through sealed cover/email/post/fax etc. will be rejected.
5. Any change/corrigendum/extension of opening date in respect of this tender shall be issued through **CPP Portal** only and no press notification will be issued in this regard. Bidders are therefore requested to regularly visit our **CPP Portal** for updates.
6. The amount of Earnest Money Deposit (EMD)/Bid Security of **Rs. 65,500/-** in the form of Demand Draft/Fixed Deposit Receipts (FDR) of any Nationalized/ Scheduled Bank in favour of "**Pay and Account Officer, CWPRS, Pune**". The bidder should upload the scanned copy (.pdf) of the EMD along with Technical bid document.
7. **The original copies of documents as mentioned in clause 15.7 of ITB and EMD / Bid Security or a copy of exemption certificate of EMD, valid up to the bid validity period (NSIC/MSME) for the items tendered should be submitted to the office of Scientist-C, CPC, CWPRS, Pune on or before 20.12.2018 at 11:00 hrs by personally or through post or courier. The bid will be opened of those documents received by office within stipulated date and time. Other bids will not open and it will be treated as rejected.**
8. On opening date, the bidder can login and see the bid opening process. After opening the bids, he/she will receive the competitor bid sheets.
9. The bidders should upload the scanned copy of duly signed full bid documents (.pdf) along with compliance report/statement.
10. The intending bidder, in case of Prime Equipment Manufacturers shall upload a self-declaration on their letter-head as PDF file in Cover-I (Technical bid) of e-tender, along with the tender documents, confirming that they are regularly manufacturing, supplying, installing, testing & commissioning of the similar equipment for the last 2 years.
11. The intending bidder, in case of Authorized Distributor/ Authorized Dealer shall possess valid authorized Distributorship /Dealership license from Original Equipment Manufacturers. The bidder shall enclose the copy of the same as PDF file in Cover-I of the e-tender while submitting the bid.
12. The bidder must ensure to quote his/her item rate / percentage rate /Lump-sum bid in the attached Bill of Quantity (**BoQ**) (Financial Bid) in Excel Format only.
13. All the tender documents (Technical & Financial bid) to be uploaded as per this tender are to be digitally or duly signed by the bidder.
14. All the communications with respect to the tender shall be addressed to:

**The Scientist -C
Construction and Procurement Cell
Room No. 201, OCL Building
Central Water & Power Research Station (CWPRS)**

Pune - Sinhagad Road, Khadakwasla
Pune – 411024, Maharashtra
Email : cpc.cwprs-pune@gov.in

List of Documents to be scanned and uploaded within the specified date and time
i.e. period for bid submission:

COVER – I (Technical Bid)

- i. Demand Draft/FDR of any Schedule Bank against EMD/Bid security. Bidders claiming exemption of EMD/Bid security, should provide documentary proof of their being registered as NSIC/MSE (indicating the terminal validity date of their registration) for the **items tendered** and the same shall be scanned and uploaded. If such a certificate is not submitted before date of opening of technical bids, for the items tendered, the bid will be treated as non-responsive and shall be rejected.
- ii. Certificate of Registration for GST.
- iii. OEM certificate/ Authorized Distributor/ Authorized Dealer shall possess valid authorized Distributorship /Dealership license from Original Equipment Manufacturers
- iv. Duly signed full tender documents (.pdf) along with compliance report/statement.
- v. Scanned documents as per clause 5.2 & 15.3 of ITB

COVER – II (Financial Bid)

- i. Price Schedule/ Bill of Quantities (BoQ)

Scientist-C
Construction and Procurement Cell

Copy to: 1. Dr. Annapurna Patra, Sc 'B', HMET Division through Shri S.D.
Ranade, Sc 'E' for kind information

2. Notice Board

**GOVERNMENT OF INDIA
NATIONAL HYDROLOGY PROJECT
WORLD BANK FUNDED**

**INVITATION FOR BIDS (IFB)
SHOPPING FOR GOODS**

Date: 16/11/2018
NIT No.: 107/2018-19

1. The Government of India has received financing from the World Bank toward towards the cost of **National Hydrology Project** and intends to apply part of the proceeds toward payments under the contract for which this Invitation for Bids is issued. **Bidders are advised to note the minimum qualification criteria specified in the Bidding Documents in order to qualify for the award of the Contract.** In addition, they may also refer to paragraphs 1.6 and 1.7 of the World Bank's Guidelines: *Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers - January 2011, revised July 2014* setting forth the World Bank's policy on conflict of interest.

3. The Scientist –C, Construction and Procurement Cell, Central Water and Power Research Station, Pune-24 invites bids electronically from eligible bidders for **Supply, Installation, Testing and Commissioning of Automatic Weather Station, Datalogger-Telemetry** under NHP for CWPRS, Pune -24. The Bidders may submit Bids for all of the packages.

Sl. No	Description of goods	Quantity	Location	Delivery Period
1	Supply, Installation, Testing and Commissioning of Automatic Weather Station (with sensors temperature, humidity, wind speed and direction, radiation, pressure; and mast of 10m height) with installation	1 Set	CWPRS, PUNE	90 days
2	Tipping Bucket Rain Gauge	3 Nos		
3	INSAT System, Server, GSM/GPRS, Monitor and Backup with Battery (Reception/Transmission Unit)	1 Set		
4	Data Logger with GSM/GPRS	1 No/Set		
5	Annual Maintenance Contract for items 1, 2, 3 (excluding server) & 4 after regular warranty of two years	5 Years		
6	Data Acquisition System	2 No.		
7	Training of CWPRS officers by the firm at CWPRS, Pune	Lump Sum		

3. The Bidding Document is available online and can be downloaded free of cost by logging on to the website <http://eprocure.gov.in/eprocure/app> or <http://www.cwprs.gov.in>. The bids are to be submitted online through the e-procurement portal only (<http://eprocure.gov.in/eprocure/app>). Bids submitted manually will not be accepted. The bidders would be required to register in the website which is free of cost.

4. For submission of the Bid, the Bidder is required to have Digital Signature Certificate (DSC) from one of the Certifying Authorities authorized by Government of India for issuing DSC. Aspiring bidders who have not obtained the user ID and password for participating in e-procurement in this Project, may obtain the same from the website: <http://eprocure.gov.in/eprocure/app>
5. Bids must be accompanied by Bid Security/EMD for the amount and in the form specified in the Bidding Document. Bid security shall have to be valid for 45 days beyond the validity of the bid. Bids should be valid for 60 days after the deadline date specified for submission. Procedure for submission of Bid Security is described in Para 7 below.
6. Bids must be submitted on <http://eprocure.gov.in/eprocure/app> on or before **11:00 hrs** on **17.12.2018** and will be opened online on **20.12.2018** at **11:00 hrs**. Record of bid opening will be electronically shared with bidders. If the office happens to be closed on the date of opening of the Bids as specified, the Bids will be opened on the next working day at the same time and venue. Any bid or modifications to bid (including discount) received outside e-Procurement System will not be considered. The electronic bidding system would not allow late submission of bids.
7. The Bidders are required to submit specified *original documents as per clause 15.7 of ITB including original Bid Security in approved form* to Scientist – C, Construction & Procurement Cell (CPC), Central Water & Power Research Station, Khadakwasla, Pune-411024 at the address given below before the date and time specified for opening of the Bids on **20.12.2018** at **11:00 hrs** by registered post/speed post/courier or by hand, failing which the Bids will be declared non-responsive and will not be opened.
8. Other details can be seen in the bidding documents. The Purchaser shall not be held liable for any delays due to system failure beyond its control. Even though the system will attempt to notify the bidders of any bid updates, the Purchaser shall not be liable for any information not received by the bidder. It is the Bidder's responsibility to verify the website for the latest information related to the Bid.

Name and address of Purchaser
The Scientist 'C'
Construction and Procurement Cell
Room no.201, OCL Building
Central Water and Power Research Station
Pune – Sinhagad Road
Khadakwasla, Pune-411024
Tel. No: +91-20-24103220
Fax No. +91-20-24381004
Email : cpc.cwprs-pune@gov.in

**NATIONAL HYDROLOGY PROJECT
WORLD BANK FUNDED**

Invitation for Bids for Goods under Shopping

1. The **Scientist 'C', Construction and Procurement Cell, CWPRS, Khadakwasla, Pune-24** invites Bids which shall be submitted in the e-Procurement Portal for the following Goods:

Sl. No	Description of goods	Quantity	Location	Delivery Period
1	Supply, Installation, Testing and Commissioning of Automatic Weather Station (with sensors temperature, humidity, wind speed and direction, radiation, pressure; and mast of 10m height) with installation	1 Set	CWPRS, PUNE	90 days
2	Tipping Bucket Rain Gauge	3 Nos		
3	INSAT System, Server, GSM/GPRS, Monitor and Backup with Battery (Reception/Transmission Unit)	1 Set		
4	Data Logger with GSM/GPRS	1 No/Set		
5	Annual Maintenance Contract for items 1, 2, 3 (excluding server) & 4 after regular warranty of two years	5 Years		
6	Data Acquisition System	2 No.		
7	Training of CWPRS officers by the firm at CWPRS, Pune	Lump Sum		

2. Detailed Invitation for Bid is available on <http://eprocure.gov.in/eprocure/app>. The Bidding Document is also available online and can be downloaded free of cost by logging on to the <http://eprocure.gov.in/eprocure/app> or <http://www.cwprs.gov.in>
3. The deadline for submission of Bids is **17.12.2018 at 11:00 hrs.** Bids will be opened on¹ **20.12.2018 at 11:00 hrs.**
4. Bidders are advised to note the minimum qualification criteria specified in the bidding documents. Interested Bidders may participate in the bidding process as per instructions given in the Bidding Documents.

Name and address of Purchaser

The Scientist 'C'
Construction and Procurement Cell
Room no.201, OCL Building
Central Water and Power Research Station
Pune – Sinhagad Road
Khadakwasla, Pune-411024
 Tel. No: +91-20-24103220
 Fax No. +91-20-24381004
 E-mail: cpc.cwprs-pune@gov.in

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PART 1 – BIDDING PROCEDURES

SECTION 1 - INSTRUCTIONS TO BIDDERS

Section 1 - Instructions to Bidders (ITB)

A. General

1. **Scope of Bid** 1.1 The Purchaser, namely *Scientist 'C', Construction and Procurement Cell, CWPRS, Khadakwasla, Pune - 24* issues these Bidding Documents for the supply of Goods and Related Services as specified in Section 3, Schedule of Requirements. The name and identification number of this Shopping procurement is 107/2018-19
2. **Source of Funds** 2.1. Purchaser intends to apply a portion of the funds from the World Bank to eligible payments under the contract for which these Bidding Documents are issued.
3. **Eligible Bidders** 3.1 A Bidder shall not have a conflict of interest. All bidders found to have conflict of interest shall be disqualified. For further details, the Bidder may refer to Clauses 1.6 and 1.7 of the World Bank's Guidelines: Procurement of Goods, Works and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, January 2011, revised July 2014.
4. **Corrupt and Fraudulent Practices** 4.1. The World Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section 6.

B. Preparation of Bids

5. **Documents Comprising the Bid** 5.1 The Bid shall comprise **Two Parts**, namely the **Technical Part** and the **Financial Part**. These two Parts shall be submitted simultaneously.
- 5.2 The **Technical Part of Bid** shall comprise the following:
- (a) Letter of Bid – Technical Part in accordance with ITB Clause 6;
 - (b) Bid Security in accordance with ITB 13;
 - (c) Written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 14.2;
 - (d) Documentary evidence in accordance with ITB Clause 10 that the Goods and Related Services conform to the Bidding Documents;
 - (e) Documentary evidence in accordance with ITB Clause 11 establishing the Bidder's qualifications to perform the contract if its bid is accepted;
 - (f) Manufacturer's Authorization in accordance with ITB Clause 11.1 (a), on the form provided in Section 2;
 - (g) Performance Statement of supplies of similar goods made during the last 3 years, in accordance with ITB 11.2;
 - (h) List of Goods & Related Services indicating Bidder's offered delivery period, on the form given in Section 3.

- (i) Affidavit confirming correctness of information and documents submitted with the Bid, as per format given in Section 2; and
- (j) [IA should add any other document, if required]

5.3 The **Financial Part of Bid** shall comprise the following:

- (a) **Price Schedule (BoQ)** (using the Schedule uploaded with the bidding documents) wherein the rates shall be entered online.

6. Letter of Bid and Price Schedules

6.1 The Bidder shall submit the **Letter of Bid – Technical Part**, and **Price Schedules** using the forms furnished in Section 2, Bidding Forms. The forms must be completed without any alterations to the text. All blank spaces shall be filled in with the information requested.

7. Alternative Bids

7.1 Alternative bids shall not be considered.

8. Bid Prices and Discounts

8.1 Price Schedules shall conform to the requirements specified below.

8.2 All lots (Contracts) and items must be listed and priced separately in the Price Schedules.

8.3 The price to be quoted in the Financial Part shall be the total price of the Bid, including any discounts offered.

8.4 Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account. A Bid submitted with an adjustable price quotation shall be treated as non-responsive and shall be rejected.

8.5 If so specified in ITB 1, bids are being invited for individual lots (contracts) or for any combination of lots (packages). Prices quoted shall correspond to 100 % of the items specified for each lot and to 100% of the quantities specified for each item of a lot.

8.6 Prices shall be quoted as specified in the Price Schedule included in Section 2, Bidding Forms as stated below:

- (i) **(a) For domestic goods:** the price of the Goods quoted EXW (ex-works, ex-factory, ex-warehouse, ex-showroom, or off-the-shelf, as applicable), including Goods and Services Tax (GST)

- (b) For imported goods:** the price of the Goods quoted EXW shall be excluding GST but including customs duty and any other taxes as applicable. Customs duty exemption certificate (**refer Govt. notification No.51/96-customs dated 23.07.1996 and No. 10/96-Central Excise dated 01.03.1997**) shall be provided by CWPRS.

- (ii) Other taxes which will be payable on the Goods if

the contract is awarded to the Bidder; and

(iii) The price for inland transportation, insurance, and other local services required to convey the Goods to their Final Destination (Project Site), namely **Central Water and Power Research Station, Khadakwasla, Pune-411024.**

(iv) Price for Related Services, if any.

9. Currencies of Bid

9.1 The Bidder shall quote in **Indian Rupees** only **in BoQ.**

10. Documents Establishing the Conformity of the Goods and Related Services

10.1 To establish the conformity of the Goods to the Bidding Documents, the Bidder shall furnish as part of its Technical Part of Bid, the documentary evidence that the Goods conform to the technical specifications and standards specified in Section 3, Schedule of Requirements.

11. Qualifications of the Bidder and Documentary Evidence

11.1 The documentary evidence of the Bidder's qualifications to perform the contract, if its bid is accepted, shall be submitted as part of its Technical Part of Bid, to establish to the Purchaser's satisfaction:

(a) (i) that if a Bidder that does not manufacture or produce the Goods it offers to supply, it shall submit with its Bid the Manufacturer's Authorization and confirmation to provide Manufacturer's warranty/guarantee for the goods along with the supply, on the form included in Section 2. The Bidder has the option to furnish the said Authorization from the Authorized Dealer or Distributor in which case, the Form provided in Section 2 may be modified by the Bidder suitably. However, if the Bidder itself is an Authorized Dealer or Distributor, it may submit Certificate evidencing this position – in lieu of Manufacturer's Authorization.

(ii) that supplies for any particular item in each schedule of the bid should be from one manufacturer only. Bids from agents offering supplies from different manufacturers for the same item of the schedule in the bid will be treated as non-responsive.

(b) that the Bidder meets the following qualification criterion:

The bidder should have supplied goods similar to the type (& capacity) specified in the Schedule of Requirements up to at least **100%** of the quantity in any one of **last 3 years**. At least 40 % of the quantity in case of equipment offered for supply should have been in successful operation for at least one year as on date of bid opening.

11.2 The Bidder shall also submit with its Bid, details of supplies of similar goods made during the last 3 years preceding the deadline for Bid submission, using the Proforma for Performance

Statement included in Section 2. Bidders shall invariably furnish documentary evidence (End User's certificate) in support of the satisfactory operation of the goods as specified above.

11.3 Bids from Joint Ventures are not acceptable.

11.4 Financial Capability:

The bidders should have annual sales turnover of minimum of **Rs. 33.00 Lakh in the past 3 years**. The Bidder shall furnish documentary evidence that it meets the Financial capability.

12. Period of Validity of Bids

12.1 Bids shall remain valid for the period of **60 days** after the bid submission deadline date prescribed by the Purchaser. A bid valid for a shorter period shall be rejected by the Purchaser as non-responsive.

13. Bid Security

13.1 The Bidder shall furnish as part of its Technical Part of Bid, a Bid Security/EMD, in original for an amount of **INR 65,500/-** in favour of **"Pay and Accounts Officer, CWPRS, Pune"** [IA should insert the amount equivalent to 2 % of the estimated cost of the lot; in case Bids are being invited for several lots, Bid Security amounts should be tabulated for each Lot in a Table to be added below for this purpose.]

Bid Security/EMD should be in one of the following forms:

- (i) Demand Draft issued by a nationalized/scheduled bank; or
- (ii) Fixed Deposit/Time Deposit certificates issued by a nationalized/scheduled bank for equivalent or higher values are acceptable provided these are pledged in favour of the **"Pay and Accounts Officer, CWPRS, Pune"** and such pledging has been noted and suitably endorsed by the bank issuing the deposit certificates.

The Bid Security / EMD shall be valid for forty-five (45) days beyond the original validity period of the Bid.

13.2 If a Bid is not accompanied by a substantially responsive Bid Security / EMD, it shall be rejected by the Purchaser as non-responsive.

13.3 Bid Security / EMD of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's signing the contract and furnishing the Performance Security pursuant to ITB 33.

13.4 The Bid Security / EMD of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the contract and furnished the required performance security.

13.5 The Bid Security / EMD may be forfeited:

- (a) if a Bidder withdraws its Bid during the period of bid validity specified by the Bidder on the Letter of Bid, or

- any extension thereto provided by the Bidder; or
- (b) if the successful Bidder fails to:
 - (i) sign the Contract in accordance with ITB 32; or
 - (ii) Furnish a performance security in accordance with ITB 33.

14. Preparation and Signing of Bid

- 14.1 The Bidder shall prepare the Bid as per details given in ITB 15.
- 14.2 The Bid shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of Power of Attorney and shall be submitted with the Bid. The name and position held by each person signing the authorization must be typed or printed below the signature.
- 14.3 Corrections, if any, in the bid can be carried out by editing the information before electronic submission on **CPP Portal** (<http://eprocure.gov.in/eprocure/app>)

C. Submission and Opening of Bids

15. Electronic Submission of Bids, and Submission of Original Documents

- 15.1 Bids, both Technical and Financial Parts, shall be submitted online on the e-Procurement Portal (**CPP Portal**) specified in ITB Clause 1. Detailed guidelines for viewing Bids and submission of online Bids are given in the **CPP Portal**. Any Bidder can log on to this **CPP Portal** and view the IFB and details of Works/Goods for which Bids are invited. However, every Bidder has to enrol/ register in the **CPP Portal**, and should have valid Digital Signature Certificate (DSC) in the form of smart card/e-token obtained from any Authorised Certifying Agency. The Bidder should register in the **CPP Portal** using the relevant option available. Then the Digital Signature registration has to be done with the e-token, after logging onto the website. The Bidder can then log in the **CPP Portal** through the secure login by entering the password of the e-token & the user id/ password chosen during registration.

The Bidder should go through the Bidding Document carefully and submit the specified documents, along with the Bid otherwise the Bid may get rejected.

- 15.2 The Bidder shall submit Bid in two separate online folders/envelopes² **simultaneously**, i.e. Folder 1, for the **Technical Part** and Folder 2 - for the **Financial Part**.
- 15.3 **The 'Technical Part of Bid'** submitted online by the Bidder shall comprise the following documents and the Bidder shall upload scanned copies of these documents with the Bid.
 - (i) **Letter of Bid – Technical Part** as per format given in Section 2;

- (ii) **Bid Security** in accordance with ITB 13;
- (iii) **Delivery Period Offered:** List of Goods & Related Services indicating Bidder's offered delivery period, on the form given in Section 3;
- (iv) **Authorization:** Power of Attorney of signatory of Bid in accordance with ITB 14.2;
- (v) **Manufacturer's Authorization** in accordance with ITB 11.1 (a), on the form provided in Section 2;
- (vi) **Affidavit** confirming correctness of information and documents submitted with the Bid in accordance with ITB Clause 5, on the form provided in Section 2;
- (vii) **Performance Statement** of supplies of similar goods made during the last 3 years, in accordance with ITB 11.2;
- (viii) **Compliance of Goods and Related Services with Technical Specifications and Standards:** Documentary evidence in accordance with ITB Clause 10;
- (ix) **Qualifications of the Bidder:** Documentary evidence of Bidder's qualifications to perform the Contract in accordance with ITB 11.1; and
- (x) **Authorized address and contact details** of the Bidder having the following information:
 - Name of Firm
 - Address for communication
 - Telephone No.(s): Office
 - Mobile No.
 - Facsimile (FAX) No.
 - Electronic Mail Identification (E-mail ID)

15.4 The Technical Part of Bid shall not include any financial information related to the Bid price. Where material financial information related to the Bid price is contained in the Technical Part of Bid, the Bid shall be declared non-responsive

15.5 **The Financial Part of Bid** submitted online by the Bidder shall comprise the following:

- (a) Price Schedule (BoQ) (using the Schedule uploaded with the bidding documents) **wherein the rates shall be entered online.** Upon entry of unit rates for all the items, total Bid Price would be calculated automatically by the System and displayed.

15.6 All documents are required to be signed digitally by the Bidder. The System generates a Unique Bid Identification Number, time stamped as per server time, as an acknowledgement for Bid submission.

15.7 Submission of Original Documents

Bidders are required to submit the following documents in original to the Purchaser's office.

- (i) Original Bid Security / EMD in approved form or **a copy of exemption certificate of EMD, valid up to the bid validity period (NSIC/MSME) for items tendered**
- (ii) Affidavit confirming correctness of information and documents submitted with the Bid, using the Format given in Section 2; and
- (iii) Original Power of Attorney.

These original documents should be received by the Purchaser **before the date and time fixed for opening of Technical Part of Bids (20/12/2018 at 11:00 hrs)** either by registered/speed post/courier or by hand, failing which the Bid will be declared non-responsive, and will not be opened. Hard copies of Bids or any other documents are not required to be submitted.

15.8 Any Bid or modifications to Bid (including discount) received outside the e-Procurement System (**CPP Portal**) shall not be considered.

15.9 Bids submitted manually or by Telex, or Cable or by Fax will be rejected as non-responsive.

16. Deadline for Submission of Bids

16.1 Bids must be uploaded online no later than the **17.12.2018 at 11:00 hrs**. A Bidder may modify its Bid any number of times by using the appropriate option for Bid modification on the e-Procurement Portal, before the deadline for submission of Bids. For Bid modification and consequential re-submission, the Bidder is not required to withdraw its Bid submitted earlier. The last modified Bid submitted by the Bidder within the deadline for bid submission shall be considered as the Bid. The modification and consequential re-submission of Bids is allowed any number of times.

16.2 A Bidder may withdraw its Bid by using the appropriate option for Bid withdrawal, before the deadline for submission of Bids. However, if a bid is withdrawn, re-submission of the Bid is allowed

17. Late Bids

17.1 The electronic bidding system would not allow any late submission of Bids after due date and time as per server time.

18. Public Opening of Technical Parts of Bids

18.1 The Purchaser shall publicly open Technical Parts of all Bids online in the Purchaser's office, on **20.12.2018 at³ 11:00 hrs** in the presence of Bidder's designated representatives and anyone who chooses to attend, and this can also be viewed by the Bidders online. The Financial Parts of the Bids shall remain unopened in the e-Procurement System, until the subsequent public opening, following the evaluation of the Technical Parts of the Bids.

In the event of the specified date of Bid opening being declared a holiday for the Purchaser, the Bids will be opened at the appointed time and location on the next working day.

18.2 In all cases, original documents submitted as specified in ITB 15.7 shall be first scrutinized, and Bids that do not comply with the provisions of ITB 15.7 will be declared non-responsive and will not be opened.

18.3 The Purchaser shall prepare a record of the Technical Part Bid opening that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, or modification. The Bidders' representatives who are present shall be requested to sign the record of bid opening maintained by the Purchaser. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record.

The Technical Part Bid opening summary will be uploaded on the e-Procurement Portal (**CPP Portal**).

18.4 Only Technical Parts of Bids that are opened at Bid opening shall be considered further for evaluation.

D. Evaluation of Bids

19. Confidentiality

19.1 Any effort by a Bidder to influence the Purchaser in the examination, evaluation, comparison, and post qualification of the bids or contract award decisions may result in the rejection of its Bid.

19.2 From the time of bid opening to the time of Contract Award, if any Bidder wishes to contact the Purchaser on any matter related to the bidding process, it should do so in writing.

20. Clarification of Bids

20.1 To assist in the examination, evaluation, comparison and post-qualification of the bids, the Purchaser may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder in respect to its Bid and that is not in response to a request by the Purchaser shall not be considered. The Purchaser's request for clarification and the response shall be in writing.

E. Evaluation of Technical Parts of Bids

21. Evaluation

21.1 The Purchaser's determination of a bid's responsiveness is to be based on the contents of the bid itself.

21.2 A substantially responsive Bid is one that conforms to all the terms, conditions, and specifications of the Bidding Documents without material deviation, reservation, or omission.

21.3 Evaluation of Technical Parts of Bid with respect to documents and information furnished in the Bid pursuant to ITB Clause 15.3 shall be taken up. The Purchaser will determine whether

each Bid (a) has been properly signed and supported by the Power of Attorney in favour of the signatory of the Bid; (b) is accompanied by the Bid Security/EMD of requisite amount and validity in the approved form; (c) meets the eligibility criteria defined in ITB Clause 3; (d) Delivery Period offered meets the specified requirements; and (e) has furnished details of compliance with Technical Specifications.

- 21.4 Bids from Agents, without proper authorization from the Manufacturer and without proper agreement to furnish the manufacturer's guarantee/warranty, shall be treated as non-responsive.
- 21.5 Bids offering delivery beyond the stipulated delivery will be treated as non-responsive.
- 21.6 General conditions of Contract stipulate payment schedule offered by Purchaser. If the Bid deviates from that schedule the Bid will be treated as non-responsive.
- 21.7 If a bid is not substantially responsive to the Bidding Documents, it shall be rejected by the Purchaser and may not subsequently be made responsive by the Bidder by correction of the material deviation, reservation, or omission.
- 21.8 The Purchaser shall determine, to its satisfaction, whether all eligible Bidders, whose Bids have been determined to be substantially responsive to the bidding document, meet the Qualification Criteria specified in ITB Clause 11.1.
- 21.9 **The bidders those who are technically qualified, technical demonstration (at CWPRS, Pune or nearest Pune) by the bidders is compulsory to verify the technical competency of the goods before opening of their financial bids, as per terms and conditions of the bid document. The information will be communicated by this office to the technically qualified bidders for their technical competency for demonstration of the goods. (It is applicable for a given type of goods and the same will be decided by the Purchaser)**

22. Notification of Result of Evaluation of Technical Parts

- 22.1 Only Bids that are both substantially responsive to the bidding document, and meet all Qualification Criteria shall qualify for opening of the Financial Parts of their Bids at the second public opening.
- 22.2 Evaluation of Technical Parts of Bid will be completed by the Purchaser , and a list will be drawn up of the qualified bidders whose Financial Part of Bids will be eligible for opening.
- 22.3 Purchaser shall notify in writing those Bidders who have failed to meet the Qualification Criteria and/or whose Bids were considered non-responsive to the requirements in the bidding document, advising them as under:
 - (a) That their Technical Part of Bid failed to meet the

requirements of the bidding document; and

(b) That their Financial Part of the Bid shall not be opened.

22.4 The result of evaluation of the Technical Parts of Bid shall also be made public on e-Procurement Portal.

22.5 The Purchaser shall notify in writing those Bidders whose Technical Parts of Bids have been evaluated as substantially responsive as under:

(a) their Bid has been evaluated as substantially responsive to the bidding document and met the Qualification Criteria;

(b) their Financial Part of Bid will be opened online; and

(c) notify them of the date and time of the online/public opening of the Financial Parts of the Bids.

F. Public Opening and Evaluation of Financial Parts of Bids

23. Public Opening of Financial Parts of Bids

23.1 The financial bids shall be opened online on the CPP portal on the notified date. All the bidder's names, the Bid prices, the total amount of each bid, including any other details can be viewed online at the time of financial bid opening.

23.2 The electronic summary of the bid opening will be generated and uploaded online. The Purchaser will also prepare minutes of the Bid opening, including the information disclosed and upload the same for viewing online.

24. Correction of Arithmetical Errors

24.1 The e-Procurement System automatically calculates the total amount from unit rates and quantities. The System also automatically populates the amount in words from the amount in figures and therefore there is no scope of discrepancy and need for arithmetic correction.

25. Evaluation of Financial Parts of Bids

25.1 During the detailed evaluation of Financial Parts of Bid, the substantial responsiveness of the Bids will be further determined with respect to those bid conditions i.e. Price Schedule. The Purchaser shall confirm that the following documents are in accordance with the requirements specified in the bidding document. If any of these documents or information is missing, the offer shall be rejected.

(a) Price Schedules in accordance with ITB Clauses 6, 8 & 9.

25.2 If a Bid is not substantially responsive, it will be rejected by the Purchaser, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

26. Determination of Evaluated

26.1 The Purchaser shall evaluate each Bid that has been determined, up to this stage, to be substantially responsive.

- Bid prices**
- 26.2 To evaluate a Bid, the Purchaser shall only use all the factors, methodologies and criteria defined in ITB Clause 26.3. No other criteria or methodology shall be permitted.
- 26.3 To evaluate a Bid, the Purchaser shall consider the following:
- (a) **Bids will be evaluated for the lowest cost for all the items together** and the Contract will comprise the item(s) awarded to the successful Bidder.
 - (b) An item not listed in the Price Schedule shall be assumed to be not included in the Bid, and provided that the Bid is substantially responsive, the average price of the item quoted by substantially responsive Bidders will be added to the Bid price and the equivalent total cost of the Bid so determined will be used for price comparison.
 - (c) Evaluated price shall be arrived up to Final Destination (**i.e. CWPRS, Pune**) at by adding (i) price of Goods quoted EXW including GST (ii) other taxes, if any, payable on the Goods (iii) price for inland transportation, insurance, and other local services required to convey the Goods to their Final Destination and (iv) price for Related Services, if any.
- 27. Comparison of Bids**
- 27.1 The Purchaser shall compare all substantially responsive bids evaluated in accordance with ITB Clause 26.3 to determine the lowest evaluated Bid.
- 28. Purchaser's Right to Accept Any Bid, and to Reject Any or All Bids**
- 28.1 The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to Bidders.

G. Award of Contract

- 29. Award Criteria**
- 29.1 The Purchaser shall award the Contract to the Bidder whose offer has been determined to be the lowest evaluated bid and is substantially responsive to the Bidding Documents, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.
- 30. Purchaser's Right to Vary Quantities at Time of Award**
- 30.1 At the time the Contract is awarded, the Purchaser reserves the right to increase or decrease the quantity of Goods and Related Services originally specified in Section 3, Schedule of Requirements, provided the variation does not exceed 15% and without any change in the unit prices or other terms and conditions of the Bid and the Bidding Documents.
- 31. Notification of Award; Publication of Award & Recourse to**
- 31.1 Prior to the expiration of the period of bid validity, the Purchaser shall notify the successful Bidder, in writing, that its Bid has been accepted. The Purchaser shall enclose with Notification of Award, the Contract Agreement Form duly filled in for getting it signed by the selected Bidder.

- unsuccessful Bidders**
- 31.2 Until the formal Contract is prepared and executed, the notification of award shall constitute a binding Contract.
- 31.3 The Purchaser shall publish on its website. <http://eprocure.gov.in/eprocure/app> or www.cwprs.gov.in the results identifying the Bid and lot numbers and the following information: (i) name of each Bidder who submitted a Bid; (ii) bid prices as read out at bid opening; (iii) name and evaluated prices of each Bid that was evaluated; (iv) name of Bidders whose bids were rejected and the reasons for their rejection; and (v) name of the winning Bidder, and the price it offered, as well as the duration and summary scope of the contract awarded. The Purchaser shall promptly respond in writing to any unsuccessful Bidder who, after Publication of contract award, requests in writing the grounds on which its bid was not selected.
- 31.4 Upon the successful Bidder's furnishing of the Performance Security in accordance with ITB Clause 33 and signing the Contract Agreement Form pursuant to ITB Clause 32, the Purchaser will promptly notify each unsuccessful Bidder.
- 32. Signing of Contract**
- 32.1 The successful Bidder shall sign with date, the Contract Agreement Form sent by the Purchaser pursuant to ITB 31.1, and return it to the Purchaser within 10 days of the date of receipt of the Notification of Award.
- 33. Performance Security**
- 33.1 Within ten (10) days of the receipt of Notification of Award from the Purchaser, the successful Bidder shall furnish the Performance Security in the form specified in the GCC in favour of "**PAO, CWPRS, Pune**". The Purchaser shall promptly thereafter notify the name of the winning Bidder to each unsuccessful Bidder.
- 33.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security in accordance with ITB 13.5. In that event the Purchaser may award the Contract to the next lowest evaluated Bidder, whose offer is substantially responsive and is determined by the Purchaser to be qualified to perform the Contract satisfactorily.

Section 2 – Bidding Forms

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Letter of Bid –Technical Part

INSTRUCTIONS TO BIDDERS: PLEASE DELETE THIS BOX ONCE THE DOCUMENT HAS BEEN COMPLETED.

The Bidder must prepare the Letter of Bid on stationery with its letterhead clearly showing the Bidder's complete name and address.

Note: All italicized text is for Bidder's guidance in preparing these forms and shall be deleted from the final products.

Our Reference: No..... Dated.....

To:

**The Scientist 'C'
Construction and Procurement Cell
Central Water and Power Research Station
Khadakwasla, Pune-411024**

Subject: **Supply, Installation, Testing and Commissioning of Automatic Weather Station, Datalogger-Telemetry under NHP for CWPRS, Pune -24**

Ref : NIT No. 107/2018-19

Sir,

1. We, the undersigned, hereby submit our Bid, in two parts, namely:

- (a) Technical Part; and
- (b) Financial Part

2. In submitting our Bid, we make the following declarations:

- (a) **No reservations:** We have examined and have no reservations to the Bidding Documents;
- (b) **Conformity:** We offer to supply in conformity with the Bidding Documents and in accordance with the Delivery Schedules specified in the Schedule of Requirements the following Goods and Related Services [*insert a brief description of the Goods and Related Services*];
- (c) **Bid Validity Period:** Our bid shall be valid for the period of 60 days, from the deadline fixed for the bid submission, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

- (d) **Performance Security:** If our bid is accepted, we commit to obtain a performance security in accordance with ITB Clause 33 and GCC Clause 11 for the due performance of the Contract;
- (e) **Eligibility:** We meet the eligibility requirements and have no conflict of interest;
- (f) **One Bid Per Bidder:** We are not participating in more than one bid in this bidding process;
- (g) **Government owned entity:** We are not a government owned entity/ We are a government owned entity but meet the requirements specified in the World Bank's Guidelines referred to in ITB 3.1; *[Bidder should select the appropriate option as applicable.]*
- (h) **Ineligibility:** Our firm, its affiliates or subsidiaries—including any subcontractors or suppliers for any part of the contract - has not been declared ineligible by the Bank, or under Indian laws or official regulations;
- (i) **Binding Contract:** We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed.
- (j) **Not Bound to Accept:** We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.
- (k) **Suspension and Debarment:** We have not been debarred from participation in bidding/removed from approved list (dealings suspended) by the Central or any State Government or by the World Bank.
- (l) **Fraud and Corruption:** We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in any type of Collusion, Fraud and Corruption.
- (m) **Prevention of Corruption Act:** We undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely, "Prevention of Corruption Act 1988."

Yours faithfully,

Authorized Signature

Name & Title of Signatory _____

In the capacity of *[insert legal capacity of person signing the Letter of Bid]*

Name of Bidder _____

Address _____

Dated on _____ day of _____, _____ *[insert date of signing]*

Price Schedule Forms

*[The Bidder shall fill in the Price Schedule online (using the Schedule uploaded with the bidding documents) in accordance with the instructions indicated. The list of line items in column 1 of the **Price Schedule** shall coincide with the List of Goods and Related Services specified by the Purchaser in the Schedule of Requirements.]*

BILL OF QUANTITIES (BoQ)

Name of Bidder [insert complete name of Bidder] ; NIT No: 107/2018-19

PRICES IN INR										
1	2	3	4	5	6	7	8	9	10	11
Line Item No	Description of Goods/ Related Services	Quantity	Unit	Delivery Date at place of Final destination	Country of Origin	Unit price EXW [including GST for Domestic goods only]	Price for inland transportation, insurance and other services required to convey the Goods to their final destination including related services (CWPRS, Pune)	Other taxes payable if Contract is awarded (such as Customs duty for imported goods etc)	Total EXW price (Col 3X7)	Total Price (Grand Total) (Col 10+9+8)
1.01	Supply, Installation, Testing and Commissioning of Automatic Weather Station (with sensors temperature, humidity, wind speed and direction, radiation, pressure; and mast of 10m height) with installation	1	Set	90 days from the date of issue of contract agreement						
1.02	Tipping Bucket Rain Gauge	3	Nos							
1.03	INSAT System, Server, GSM/GPRS, Monitor and Backup with Battery (Reception/Transmission Unit)	1	Set							
1.04	Data Logger with GSM/GPRS	1	Set							
1.05	Annual Maintenance Contract for items 1.01, 1.02, 1.03 (excluding server) & 1.04 after regular warranty	5	Years							
1.06	Data Acquisition System	2	Nos							
1.07	Training of CWPRS officers by firm at CWPRS, Pune	Lump Sum	Lump Sum							
Total Price										

Manufacturer's Authorization

[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer. The Bidder shall include it in its bid in accordance with ITB Section.]

Date: *[insert date (as day, month and year) of Bid Submission]*

NIT No.: **107/2018-19**

To:

The Scientist 'C'
Construction and Procurement Cell
Room no.201, OCL Building
Central Water and Power Research Station
Khadakwasla, Pune-411024

WHEREAS

We *[insert complete name of Manufacturer]*, who are official manufacturers of *[insert type of goods manufactured]*, having factories at *[insert full address of Manufacturer's factories]*, do hereby authorize *[insert complete name of Bidder]* to submit a bid the purpose of which is to provide the following Goods, manufactured by us *[insert name and or brief description of the Goods]*, and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 15 of the General Conditions of Contract, with respect to the Goods offered by the above firm.

Signed: *[insert signature(s) of authorized representative(s) of the Manufacturer]*

Name: *[insert complete name(s) of authorized representative(s) of the Manufacturer]*

Title: *[insert title]*

Dated on _____ day of _____, _____ *[insert date of signing]*

PROFORMA FOR PERFORMANCE STATEMENT

[Reference: ITB 11.2]

Proforma for Performance Statement (for a period of last 3 years)

NIT No. **107/2018-19**

Date of opening. **20.12.2018**

Time **11:00 Hours**

Name of the Bidder _____

<u>Order placed by (full address of Purchaser)</u>	<u>Order No. and date</u>	<u>Description and quantity of ordered equipment</u>	<u>Value of order</u>	<u>Date of completion of delivery</u>		<u>Remarks indicating reasons for late delivery, if any</u>	<u>Has the equipment been satisfactorily functioning? (Attach a certificate from the Purchaser/Consignee)</u>
				As per contract	Actual		
1	2	3	4	5	6	7	8

Signature and seal of the Bidder

**FORM OF AFFIDAVIT FOR CORRECTNESS OF
INFORMATION AND DOCUMENTS SUBMITTED WITH BID**

[Reference ITB 5]

[This affidavit should be on a non-judicial stamp paper of Rs.10/- and shall be attested by Magistrate/ Sub-Judge/ Notary Public]

I, (*name of the authorised representative of the Bidder*) solemnly affirm and state as under:

1. I hereby certify that all the information and documents furnished with the Bid submitted online in response to NIT No. 107/2018-19 date 16/11/2018 issued by **The Scientist – C, CPC, CWPRS, Pune - 24** for **Supply, Installation, Testing and Commissioning of Automatic Weather Station, Datalogger-Telemetry** under NHP for CWPRS, Pune -24 are true and correct.

2. *I hereby certify that I have been authorised by (*the Bidder*) to sign on their behalf, the Bid mentioned in paragraph 1 above.

Deponent

Place:
Date:

** This sub-paragraph is not applicable if the Bidder is an individual and is signing the Bid on his own behalf.*

PART 2 - SUPPLY REQUIREMENTS

SECTION 3 – SCHEDULE OF REQUIREMENTS

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1. LIST OF GOODS & RELATED SERVICES AND DELIVERY PERIOD

Line Item No.	Description of Goods and Related Services	Quantity	Physical unit	Final Destination (Project site)	Desired Delivery Period for completion of supply from the date of the Contract	Bidder's offered Delivery Period [to be provided by the Bidder]
1	2	3	4	5	6	7
<i>[insert item No]</i>	<i>[insert description of Goods/Related Services]</i>	<i>[insert quantity of item to be supplied]</i>	<i>[insert physical unit for the quantity]</i>	<i>[insert place of Delivery]</i>	<i>[insert the number of days from the date of the Contract]</i>	<i>[insert the number of days from the date of the Contract]</i>
1	Supply, Installation, Testing and Commissioning of Automatic Weather Station (with sensors temperature, humidity, wind speed and direction, radiation, pressure; and mast of 10m height) with installation	1 set	set	CWPRS, Khadakwasla, Pune-24	90 Days	
2	Tipping Bucket Rain Gauge	3	Nos			
3	INSAT System, Server, GSM/GPRS, Monitor and Backup with Battery (Reception/Transmission Unit)	1	Set			
4	Data Logger with GSM/GPRS	1	No/Set			
5	Annual Maintenance Contract for items 1, 2, 3 (excluding server) & 4 after regular warranty of two years	5	Years			
6	Data Acquisition System	2	Nos			
7	Training of CWPRS officers by the firm at CWPRS, Pune	Lump Sum	Lump Sum			

Note:

1. All details should be filled in by Purchaser except for Colum 7.
2. Delivery Period offered by the Bidder should be filled in Column 7 by the Bidder.

2. TECHNICAL SPECIFICATIONS

Technical Specification TBR, AWS, Data acquisition system , Data logger, telemetry and Civil works for AWS installation, training of staff.

1. Automatic Weather Station (AWS)

1.1 AWS Sensors

Feature	Value
Site Conditions	
Ambient	1 to 50 degrees C
Humidity	10% to 100%,
Altitude	500 to 550 m
Temperature Sensor	
Sensor Type	Resistance type Temperature Sensor
Range	-40 to 60 Degree C
Resolution	$\pm 0.1^{\circ}\text{C}$
Accuracy	-40 ° C to +40 with in $\pm 1^{\circ}\text{C}$ and above it $\pm 2^{\circ}\text{C}$
Response Time	10 sec or lesser
Self-aspirated	To ensure continuous supply of air free from turbulence, water droplets and radiation
Output Interface	Digital output compatible with Data logger
Power Supply	12V DC
Accessories	All Accessories for mounting the instrument e.g. special cross arm clamps or flag, if any shall be provided
Humidity Sensor	
Sensor Type	Capacitive/ Solid State Humidity Sensor
Range	0 to 100 %
Resolution	1%
Accuracy	$\pm 3\%$ or better
Response Time	10 sec or lesser
Output	Digital output compatible with Data logger
Wind Speed and Direction Sensor	
Sensor Type	1.Ultrasonic sensor (No moving Parts)
Range	60m/s for speed ;0-360 Degree
Resolution	0. 1 m/s for speed; ± 1 Degree for direction
Accuracy	± 0.5 m/s for speed ≤ 5 m/s& 10% beyond 5m/s ; ± 5 Degree or better for wind direction
Response Time	Less than 1 sec lag in operating range
Accessories	All Accessories for mounting the instrument e.g. special cross arm clamps or flag, if any shall be provided
Sensor Type	2. Cup anemometer (solid state magnetic sensor) for wind speed
Range	0.5-89m/s
Resolution	0.1m/s

Accuracy	±0.5 m/s for speed≤5m/s& 10% beyond 5m/s ; ±5 Degree or better for wind
Output	Digital output compatible with Data logger
Response Time	10 sec or better
Sensor Type	Wind vane and potentiometer for wind direction
Range	0-360 Degree
Resolution	1 Degree
Accuracy	±7%
Response Time	10 sec or better
Output	Digital output compatible with Data logger
Pressure Sensor	
Sensor Type	Solid state
Range	600 - 1200 hPa
Resolution	± 0. 1 hPa
Accuracy	± 0.2 hPa
Response Time	10 sec or better
Output	Digital output compatible with Data logger
Solar Radiation Sensor	
Sensor Type	ISO Secondary class Pyranometer
Spectral Range	400-1100 nm
Range	0-2000W/m ²
Resolution	5 W/ m ²
Accuracy	2 % or better
Response Time	10 sec or better
General Features	
Material	Corrosion Resistance Metal (Stainless steel/ Aluminum or PVC)
Tools	Complete tool kit for operation and routine maintenance
Manuals	Full Documentation and maintenance manual in English
Accessories	Sensor Mounting support, cables and other accessories as required
Output Interface	Analogue output Compatible with Data logger
Power Supply	12 V DC or switch rated for 12 VDC

Note: Calibration certificate for each sensors have to provide by the vendor at the time of delivery

1.2. Mast and Support

Features	Value
Height	10 m(Height adjustable for installing the sensors)
Resistance to wind	Including guys rope and all accessories / tools for mast mounting must be able to resist a wind speed of 110 km/hour.
Resistance to corrosion	Corrosion free(metal).
Material	Aluminium or stainless steel
Resistance to wind	Able to resist a wind speed of 110 km/hour.

Resistance to corrosion	Corrosion free.
Components	<ul style="list-style-type: none"> - lightning rod, ground rod and conductors - lightning / over voltage protection devices for sensors, data logger, transmitter and power supply, as required

2 Tipping Bucket Raingauges

2.1 Tipping Bucket Raingauge (Type-I)

Feature	Value
Site Conditions	
Ambient Temperature	1 to 50 degrees C
Humidity	10% to 100%,
Altitude	500 to 550 m
Sensor	
Sensor Type	Tipping Bucket reed switch
Intensity Range	0-250 mm/h or better
Resolution	0.5 mm
Accuracy (Intensity)	2% or better
General Features	
Output Interface	Digital output compatible with Data logger
Material	Corrosion Resistance Metal (Stainless steel)
Enclosure	Ability to service tipping buckets without involving the re-leveling of the gauge.
Protection	NEMA 4 or IP65
Tools	Complete tool kit for operation and routine maintenance
Manuals	Full Documentation and maintenance manual in English
Accessories	Sensor Mounting support, cables and other accessories as required
Specific Features	
Collecting Funnel Diameter	200 mm or 8 Inch or equivalent
Insect Screen	Insect covers on all openings should be provided

2.2 Tipping Bucket Raingauge (Type-II)

Feature	Value
Site Conditions	
Ambient Temperature	1 to 50 degrees C
Humidity	10% to 100%,
Altitude	500 to 550 m
Sensor	

Sensor Type	Tipping bucket reed switch
Range	0 -150mm/hr or better
Resolution	0.1mm or better
Accuracy (Intensity)	2 % or better,
Collecting Funnel Diameter	200 mm or 8 Inch or equivalent
General Features	
Output Interface	Digital output compatible with Data logger
Power Supply	12 V DC or switch rated for 12 VDC
Material	Corrosion Resistance Metal (Stainless steel)
Enclosure	NEMA 4
Tools	Complete tool kit for operation and routine maintenance
Manuals	Full Documentation and maintenance manual in English
Accessories	Sensor Mounting support, cables and other accessories as required

2.3 Tipping Bucket Raingauge (Type-III, for Snow (hourly) measurement)

Feature	Value
Site Conditions	
Ambient Temperature	-40 to 50 degrees C*
Humidity	10% to 100%,
Altitude	2000 to 6000 m*
Sensor	
Sensor Type	Tipping bucket reed switch
Range	0 to 700mm/hr
Resolution	0.2mm or better
Accuracy (Intensity)	0.2 mm/hr; $\pm 2\%$ @ < 250 mm/hr (9.8 in/hr) $\pm 3\%$ @ 250 to 500 mm/hr (9.8 to 19.7 in/hr)
General Features	
Output Interface	Digital output compatible with Data logger
Power Supply	Main power: 10- 30VDC, SDI -12 Power: 9-16 VDC
Material	Corrosion Resistance Metal (Stainless steel)
Enclosure	NEMA 4
Tools	Complete tool kit for operation and routine maintenance
Manuals	Full Documentation and Maintenance manual in English
Accessories	Sensor Mounting support, cables and other accessories as required
Specific Features	
Funnel Diameter:	200 mm (7.87 in)

* Temperature and altitude range for the site are selected to create test facility for TBR at CWPRS for testing of snow gauges in the high altitude regions of Himalayas.

3. INSAT System, Server, GSM/GPRS, Monitor and Backup with Battery (Reception/Transmission Unit)

3.1 GSM/GPRS Modem

GSM / GPRS Modem (for telemetry of Data to server and communication with 2 Nos Electronic display boards)

Feature	Value
Ambient Site Conditions	
Operating Temperature	From -20o C to +60o C
Performance	Data Reception availability of 95% or better
Form factor	The Transmitter should either be integral part of data logger specified above, or it should be supplied as independent unit compatible with supplied data logger
Specific Features	
Communication Direction	Utilize GPRS network for two-way TCP/IP (INTERNET) connection
VPN protocol	Radio to utilize VPN protocol
Transmission trigger	Data collection to be triggered by interrogation from Data Center, or by event based transmission triggered by remote site
Power Saving	Ability to disable interrogation system in order to save power at remote site
Communication Protocol	Data transmission to execute HTTP Post or FTPS to transmit data to the Data Centre
Accessories	All associated equipment, including Antenna all cables and mounting hardware
Antenna features	
Frequency range	900 MHz: 824-960 MHz/1800MHz:1710-1880 MHz
Im Impedance	50 ohms
VSWR	≤ 2.0
Radiation	Omni-directional
Operating temperature	-10 to + 60 degrees Celsius
connector	SMA adaptable to GSM/GPRS modem
cable length	As required

- Note-** 1) Data will be transmitted from Data Logger to Boards through server.
 2) Validated data from server will be transmitted to two Electronic Display Boards via GSM/GPRS or through cable. The cost of SIM cards along with recharge for entire warranty & AMC period at Data logger and Server will be borne by

bidder.

3.2 INSAT Radio

Feature	Value
Operating Temperature	From -20°C to + 60°C
Environment Relative Humidity	0 to 100%
Carrier Stability	In steps of 100 Hz from 402.0 MHz to 403.0 MHz
Career Frequency	402 - 403 MHz
Modulator	PCM/BPSK
Data coding	NRZ(L)
Output Power	3-10 W, user settable
Data Bit Rate	4.8 kbps
Frequency Stability	
a) Long term	Transmit frequency inaccuracy including aging of oscillator should not exceed ± 400 Hz per year. Oscillator/synthesizer should have provision to adjust for the long-term drift
b) for temperature	$\pm 0.20^\circ\text{C}$ or better for $+10^\circ\text{C}$ to $+60^\circ\text{C}$ $\pm 0.35^\circ\text{C}$ or better for -20°C to $+ 10^\circ\text{C}$
Signal Bandwidth	6.0 KHz maximum or better
Output Power	3-10 W (settable)
Power Stability	± 1 dB
Spurious	-60 dB or better
Harmonics	-40 dB or better
Antenna cable	LMR 400 grade or better
Performance	Data reception availability of 99% or better
Operating power	Switched 12V D.C controlled by data logger.
Form factor	The transmitter should either be integral part of the data logger specified above, or it should be supplied as independent unit compatible with the supplied data logger.
Yagi Antenna	
Polarization	LHCP or RHCP, switchable in field
Gain Minimum	11 dbi or better
Centre Frequency	402-403 MHz
Mounting	Proper mounting and Pointing arrangement for 360 degree azimuth and elevation adjustment
Operating Wind speed	250 kmph
Wind Survival	300 kmph
Material	Rust-proof and oxidation-proof
Operating rain rate	100 mm/hr and water proof
Specific Features	
Satellite System	INSAT radio system to be used on the INSAT satellite operated by ISRO

Certification	Certificate of acceptance required by ISRO and/or IMD/ CWC/NPMU as part of the bid package
Accessories	All associated equipment, including GPS, GPS Antenna, INSAT antenna, all cables and mounting hardware .

INSAT Antenna will be installed at AWS site.

Note- 1) The selection of frequency and mode of transmission shall be through software settings only.

2) If any sensor is not connected then it should transmit '___' Characters in place of the sensor value.

3.3. Server Specifications:

Network Server	
Processor	Intel® Xeon® processors E5-2620 v4 series or better
Memory	32 GB RAM scalable up to 256 GB with minimum 2400HZ frequency or better
HDD	Hard Drive capacity of a minimum of 2 TB with RAID 5 HDD or higher SSD or better
RAID Support -	12Gbps dedicated slot for the first RAID; support for up to four RAID adapters
Network Controller	2 x 10/100/1000 MBPS, minimum 2x1Gb Ethernet controller
Ports	Minimum 2 x USB 2.0 front, 2 x USB 3.0 rear, 1 x USB 2.0 internal for hypervisor/1 front (optional) and 1 back
System Management	Minimum IMPI 2.0 complaint, LAN connectivity to provide remote console and management.
Operating System	Latest Windows Server with media and manual, Antivirus with Internet Security for all inbound and outbound HTTP, SMTP & FTP traffic across the network.
Power Supply	1/2 redundant 550W AC/750W AC/ 900W AC/ 1500W AC
Certification	ISO 9001:2008, 14001:2015, certified manufacturer for all components.
Mounting	Rack Mountable server with rack mounting kit. The servers will be fixed in a rack with casters and glass door. The architect of servers should be 100% redundancy with heat beat/status being reported to the administrator on E-mail/SMS in case of failure event
Keyboard	104 keys or higher OEM USB Keyboard
Mouse	Optical Scroll with USB interface.

Monitor	24 inch or better Full HD ; Resolution :- 1920*1200 pixel
Graphics	2GB Graphics or better
Backup	Battery for Backup of Server unit is 3days and Reception of Telemetry unit is 21 days.
Model	will be specified as the latest available at the time of delivery with manuals, will have a minimum of bays to accommodate the hot swap disk bays.
Installation and Commissioning	Supplier should Install and commission Server as per specifications for both software and hardware.
Manuals	Operation Manual, User Manual, Trouble shooting Manual in English Language in both soft and hard copy format along with Server.

3.4. Real Time Data Acquisition System (RTDAS) for Server :-

- i. RTDAS software simplify the weather monitoring process and aids in data communication with the Data logger, Data Acquisition System and also in data display and analysis, The software should be capable of generating daily, weekly, monthly and annual summaries, extremes (Low/ High) and charts.
- ii. System should have reliable , field proven State of Art, High Speed Communication
- iii. Software shall be built around MS Windows Operating System.
- iv. Expandable for future requirement.
- v. System to display Present as well as History trends/charts/data.
- vi. Software should able to validate the data.

Requirement for Electronic Display Boards (EDBs)- (EDBs are not part of this Bid)

- i. In case of sensor/server failure, EDB should display the ' NIL' data,
- ii. All communication to EDB will be through GSM/GPRS.

Additional Requirements :-

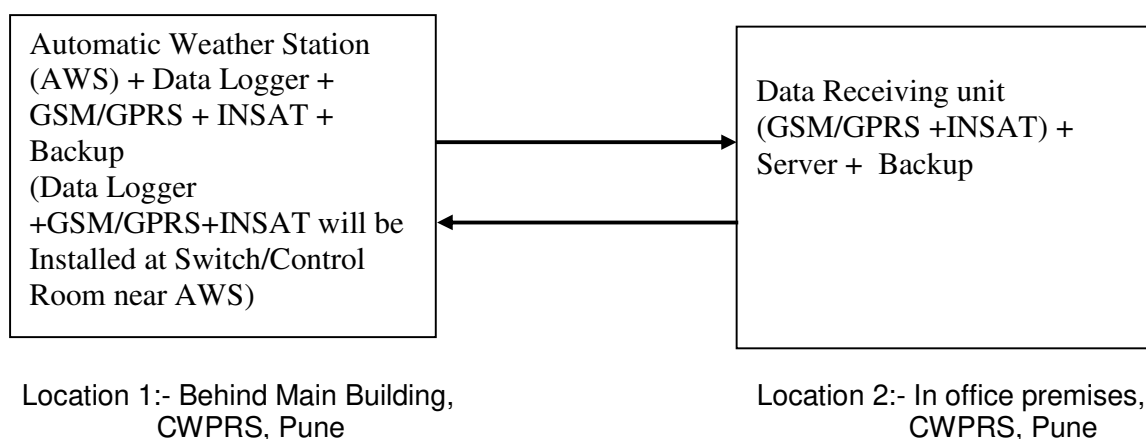
- i. Whole System (AWS, Data Logger, INSAT, GSM/GPRS, Data Acquisition system. (Laptop), server with backup , SIM cards) should have warranty of 2 Years and subsequent AMC for the same is for 5 years excluding Data Acquisition system (Laptop) and server.
- ii. **Required SIM cards at AWS site & Server for uninterrupted GSM/GPRS communication with Electronic Display Boards are to be provided by the bidder along with subscription for entire warranty and AMC period. Cost these shall be borne by the bidder during warranty and AMC period.**
- iii. Required software provision and development of Real Time Data Acquisition system (RTDAS) is to be done by bidder.
- iv. Any additional requirement, module and/or accessories, if required, should be suggested by the bidder and price of the same should be included in the bid.
- v. Bidder to go through the entire bid document and adhere to each and every point and/or requirement mentioned.

- vi. Data centre is the respective server where data is expected to be received. Data through GSM/GPRS will be received at CWPRS Server. In case of INSAT based telemetry, the Data Centre is Earth receiving station (ERS) server maintained by IMD Pune/ CWC Delhi

3.5. Specifications for Installation of Data Logger and Telemetry System:-

The Data Logger, GSM/GPRS and INSAT will be installed at Control Room near AWS. INSAT Antenna will be install at AWS site as per WMO/ BIS Standards guidelines. A Data receiving Station will be installed at pre-designated location in CWPRS. This location will host GSM/GPRS, INSAT Data Reception, Server and Backup.

The Layout Drawing for installation of proposed Data Logger and Telemetry system is shown below.



4. Data Collection Platform

4.1 Power Supply

Feature	Units
Battery	
Voltage	12 V low current drain (SMF) – easily available in Indian markets
Type	Sealed Maintenance free
Capacity	to provide 21 days of backup
Charger	Charger from AC mains with protection
General	
The supplier should determine optimal batteries, such that system should be operational for at least 21 days in the absence of charging. It should provide power 12V,18V or as required for the various sensors and data logger installed in AWS. [Supply is from AC Main]	

4.2 Data Logger for Multiple Sensors of AWS and software

Functional Requirement:

1. The system shall automatically collect the observations from attached sensors, process and store them into its memory and transmit through GSM /GPRS & INSAT communication link to central station as per the preprogrammed measurement interval, And also system shall transmit hourly basis data of every full hour IST to the ERS through satellite at preprogrammed transmission time.
2. The DCP shall continuously monitor the status of the instruments, power supply and communications. In the event of failure of an instrument or sensor or disruption of any of the power sources, an alarm shall be sent back to the modeling center
3. The sensor signal conditioning unit should be integral part of the system.
4. The number of analog / digital SDI/ RS232 / RS485 etc channels in the Data Logger must be compatible to the sensors being supplied and also for other battery monitoring systems.
5. The system shall have provision to easy include and change the following information in the field as mandatory requirements
 - Time of observation
 - Sensor identification
 - Data transmission time for INSAT & GSM/ GPRS communication
 - Programmable Sensor data measurement interval
 - Configuration of Measurement, Logging & GPRS/GSM data transmission interval
 - Gain, offset, Datum parameterization for all sensors
 - Configuration of FTP server & mobile number of data
6. The system shall have an integrated microprocessor based data acquisition and storage system having adequate hardware configuration and software support to serve as an interface between sensors and communication link to perform tasks.
7. Providing necessary electrical power to the sensors and conversion of electrical output signals from the sensors into engineering values based on calibration equation stored in the memory. Fully compatible with all type of sensors provide in the package shall be mandatory
8. The system should be stand alone and all programming functions/setup to be carried out through system keypad and display independent of PC laptop
9. Storage of observed data along with time for all the parameters in the memory. Memory capacity to retain at least 365 days data is required. Data shall be available even if the power supply to the system has failed (RAM Backup battery) for one year.
10. The system should be capable of continuous updating the values of sensed parameters and post processing the instantaneous values in to average values over a specified period of time for transmission to the DCP with earth receiving station.
11. Full compatibility with all types of sensors provided in the packages shall be mandatory.
12. The system shall have in built sensor simulation system option to conduct test on the system for field installation, two point calibrations.
13. Management of DCP transmitter to optimize the battery consumption.

14. The system shall support the following functions
- a) Easy programming set up
 - b) Multitasking capability
 - c) User friendly software programming
 - d) The system shall have self-diagnostic facility and be capable of displaying station ID/Sensor ID codes and messages in the display panel for general identification of the fault. It should have facility to monitor these codes and other health status through an external laptop/PC
 - e) Set up shall be organizes in tree of menus and submenus. Protection of setup parameters and data through password should be supported by the system. In addition, The DCP shall support the manual entry of data through keypad and its display
 - f) Data including the setup and program files shall be transferable to from the system via a serial port to PC/ Laptop, SD card, USB or other suitable memory device and vice versa
15. The data logger shall be programmable locally in the field via laptop/PC
16. DCP should be supplied with software for configuration and troubleshooting.
17. The surge suppression in the form of fuse or the appropriate device shall be provided for all interfaces to protect the data logger from surges emanating from the sensors
18. Data Logger shall be compatible with TDMA type UHF transmitters and mode of INSAT communication is Time Division Multiple Access (TDMA).
19. The Data Logger shall store data in memory, in case of GPRS/GSM communication failure. The data shall be transferred automatically once GPRS/GSM communication is retained. This will ensure no data loss during no communication also.

Technical specification for Data logger

Site Condition	
Ambient temperature	1 to 50 degrees C
Relative humidity	10% to 100%,
Altitude	500 to 550 m
General features	
Model	Well proven and widely used model, produced by a primary brand name and tested in a large number of installations. Provide manufacturer's certificate that the model proposed has been in production for at least 3 years.
Design	Open design, operating with a wide variety of sensors.
Firmware Operating system	Multi tasking operating system capable to log data and transmit at same time (Licensed version).
Change of setup	Change of setup does not affect logged data.
Plug and play	Plug and play ease of setup using a windows based graphical views.
Resolution	ADC resolution \geq 16 bit.
Conversion	+/- 1 LSB

Accuracy	
Sample intervals	1sec to 24 hours in 1 sec increments (user selectable)
Visual Display	LED/LCD to operate in the range(-10 ⁰ C to 55 ⁰ C) viewing current data and setting values
Watch dog timer	System should reset upon microprocessor failure
Real time clock	GPS synchronized, stability: 1 ppm/year or better
Flash memory	Non-volatile Flash memory that can store one year of data and expandable to a minimum of 1GB.
Recording Interval	Individual recording intervals for each sensor/parameter
Battery/Power Supply	12 V chargeable maintenance free 65AH capacity , low current drain (quiescent ≤10.0mA)
Triggering	User configurable alarms (triggering)
Voltage level	Monitoring of voltage level.
Internal clock	Internal clock with drift less than 2 seconds per year or using GPS
Input Interface	As required for the sensors
Input/ Output interface	<p>Should match minimum requirements :</p> <ul style="list-style-type: none"> - for use with AWS, 16 analogue channels and 8 digital input / output channels needed. - Analog /Digital/Pulse Inputs:- Data Logger should support for all data received from AWS and TBR sensors . - The SDI-12, RS232, RS 485, RJ 45 and USB interfaces are required to connect to different purposes. - output needed for: <ul style="list-style-type: none"> a) manual readout. etc b) direct data downloading to a USB flash drive without the need for a laptop or data retrieval device. c) Port for configuration :- One Serial Port RS232 and USB for communication with Laptop and programming d) 2 ports for communication with Telemetry (GSM/INSAT) device. <p>Note: The Data logger should have at least 2 ports for data transmission via Telemetry devices (GSM/INSAT). Both Telemetry and Electronic Display Boards (EDB) systems should work simultaneously for redundancy. The type of port required for telemetry device may be different (Serial, RS 485, RS 232, RJ 45, etc) and proposer may offer multiple models having different combination of ports.</p> <ul style="list-style-type: none"> e) Display Port :- Optional port for connecting external screen for data in running text. Note: The port for attaching external display device to show data as running text.
Enclosure	For wall-mounting in a shelter / enclosure with protection IP65 (NEMA 4) or better
Operating System	Windows software for system configuration / communication.
language	English version
Licenses	All required licenses included
User levels privileges	Different user levels, system of user rights / passwords, access restricted to authorised personnel.

Data security	Redundant storage, periodic automatic backup procedures.
System integrity	System integrity check procedures
Others	AWS software simplify the weather monitoring process and aids in data communication with the Data logger, Data Acquisition System and also in data display and analysis. (The software should be capable of generating daily, weekly, monthly and annual summaries, extremes (Low/ High) and charts-- should be available in server)
Accessories	Serial cable + adaptor (if required) for notebook connection. All accessories (fixing units etc.) as required
Tools	complete tool kit for installation and routine maintenance giving full detail (number of pieces and type)
Manuals	Full documentation and maintenance instructions in English (2 copies).
Internal battery	Internal battery backup for clock lithium battery, storage 2 years
General Features	<ul style="list-style-type: none"> a) Alarms and Triggers at server side b) Flash Memory over writing option c) Self diagnostic facility d) Statistical Data Analysis Min/Max, Cumulative, Instantaneous, Average. e) Ability to add or remove sensors f) Keypad for displaying or transmitting data to memory stick, configuration of data logger and sensors. g) If any sensor is not connected then it should transmit '___' Characters in place of the sensor value.

4.3 Enclosure

Site Condition	
Ambient temperature	1 to 50 degrees C
Relative humidity	10% to 100%,
Altitude	500 to 550 m
Equipment	To accommodate data logger, sensor cards, battery and regulator, transmitter unit, over voltage protection devices, etc.
Material	Material should withstand hostile environment and provide protection against vandalism and be agreed with the Purchaser. Protection IP65 (NEMA 4) or better.
Locks	safety locks of good quality

5. Annual Maintenance Contract after regular warranty of two years for items:

1. Automatic weather Station (with sensors temperature, humidity, wind speed and direction, radiation, pressure; and mast of 10m height) 2. Tipping Bucket Rain Gauge 3. INSAT System, GSM/GPRS, Monitor and Backup with Battery (Reception/Transmission Unit) 4. Data Logger with GSM/GPRS

6. Data Acquisition System (Laptop) - Qty- 2 Nos

Feature	Value
Software	
Operating System	Licensed windows 10 professional or better
Version	English language version
General Features	
RAM	8 GB
Hard Disk	1 TB
Processor	Intel Core i5 or better
Rotation Speed (Storage)	5400 RPM or better
CPU Speed	2.8 GHZ or better
Memory Speed	1600MHz or better
Battery/Power Supply	Suitable and backup for 6 hours.
Visual Display (Monitor)	15 inch LED full HD; Resolution = (1920 *1080)
USB port	6
Optical Device	DVD Read Write 16X
Graphics	2 GB or better

7. Training of CWPRS officers by firm at CWPRS, Pune as detailed in Terms and Conditions

Specifications for Civil Works for AWS System

Fencing of the AWS site with a provision of gate for movement along with switch room **outside the fencing** and approach road will be carried out by the purchaser (CWPRS) at the designated site. Civil works associated with Tower Foundation, Rain Gauge foundation, foundation of Anchor Rod and Guy Rope will be carried out by the bidder as per WMO/ BIS standards and in consultation with the officers of CWPRS.

- A. **Proportions for concrete foundations:** Prevailing standards as per site condition and requirement will be adopted by the Bidder in consultation with the CWPRS officers
- B. **Painting:** The tower should be painted properly to avoid rusting by Bidder. All concrete foundations shall be painted using white cement by the Bidder.
- C. All cabling should be done concealed (drawing to provided)

Services to be offered by the Bidder

- i. **Supply:** The bidder should supply all the sensors, TBR, Data Acquisition system and other related accessories for successful installation of AWS system.
- ii. **Installation:** The bidder should do the installation of entire automatic weather station including last mile connection civil works as per technical specifications.
- iii. **Commissioning:** It includes post installation process of AWS to make it functional, to sense and record the state of weather through the data logger and software system. Connectivity of the system including AC mainline power system. Cabling of AWS and TBR systems, proper earthing for the lightening detector and the final step of data retrieval from the AWS system onto then DAS. It will also include the demonstration of complete functioning of the AWS system.
- iv. **Training of CWPRS Staff.:** Training of CPWRS Personnel for operation and maintenance of AWS equipment(after commissioning)
- v. Inspections and tests as per technical specifications.
- vi. Tool kit for assembly and maintenance as per technical specifications.
- vii. Manuals, documentation and reports as per technical specifications.
- viii. **Deployment of Staff:** A software specialist conversant with handling AWS should be deployed in CWPRS for three months for successful installation and to address the post installation, trouble shooting and customization of the software.
- ix. Maintenance of Data acquisition System

Note:

System Warranty :- Whole System (AWS, Data Logger, INSAT, GSM/GPRS, Data Acquisition system (Laptop), server with backup , SIM cards) Should have warranty of 2 Years and subsequent AMC for the same is for 5 years excluding Data Acquisition system (Laptop) and server.

Backup :- system with battery should have backup for 21 days for whole system expect Server . Server should have 1 day's backup.

Data Format :- Data received at server should be in the form of .CSV and Excel sheet. Data should store immediately in hard disk at server after reception

Terms and Conditions

1. Bid Related Requirements

1.1 General

All Goods materials to be incorporated in the supply be new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise in the contract.

Wherever reference is made in the Technical Specifications to specific standards and codes to be met by the goods and materials to be furnished or tested, the provisions of the latest current edition or revision of the relevant standards or codes in effect shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national or relate to a particular country or region, other authoritative standards that ensure substantial equivalence to the standards and codes specified will be acceptable.

1.2 Plans and Schedules to be provided

A project execution plan shall be provided after award of Contract, including system design block diagrams, a list of critical engineering activities, a manufacturing and delivery schedule, the proposed training programme, as well as guidelines and standard drawings for civil works.

1.3 Spare Parts

A list of recommended high-usage spare parts for a period of ten (10) years of operation must be submitted by the manufacturer along with cost of these spare parts. High-value spare parts, such as entire components, shall not be included in this list. The Bidder shall indicate a number of spare parts which are not intended for immediate installation. These spare parts will be available for short-term replacement of damaged or malfunctioning stations, while arrangements are made for repair, warranty or purchasing spare parts.

In addition, the Bidder must submit a complete listing of spare parts for each equipment component (sensors, data loggers, power supply, telemetry devices, server etc.) with a price list to remain valid for seven (7) years from the date of commissioning of AWS along with other sensors and necessary equipment. Cost of these spares shall not be included in Contract Price as well as in the Bid Price for evaluation. Spares shall be ordered separately for supply as needed.

1.4 Shipping and delivery

The Bidder shall be responsible, at his costs, for loading, transporting, shipping and unloading of the equipment to be supplied under the contract from the point of manufacture to the final destination of delivery. The transportation of equipment to field locations for installation after receiving inspection shall also be the responsibility of the Bidder as part of installation requirement.

The Bidder shall provide such packing of the equipment as is required to prevent its damage or deterioration during transit to its final destination.

1.5 Field Visits

For installation and subsequently for maintenance of the stations, the Bidder must have team of technical staff to meet the requirement and equipped for field visit. As back up, the system must be designed in such a way and the training component must be strong enough that equipment installation at remote stations can also be done by the Purchaser's staff, if required. Appropriate training courses shall be conducted by the contractor's experts. All systems must be preassembled and an end-to-end test must be passed prior to installation.

1.6 Civil Works

The Bidder shall provide the detailed instructions and standard design drawings like footprints of the equipment required for installation. The main civil works like the fencing and switch room with power supply point inside the fence shall be provided by the Purchaser.

1.6.1 Civil Works by Bidder

The civil works related to installation of equipment like erection of concrete block for Data Collection Platform, mounting of the equipment etc are responsibility of the bidder. The Bidder shall carry out the 'last mile connection civil works' required for installation such as foundation to AWS mast, foundation for raingauges and underground cabling.

2. Geographical and Ambient Specifications

2.1 Location And Climatic condition

All materials and equipment supplied under these specifications shall be suitable for being delivered, stored and operated under continental conditions with extreme changes of temperature between winter and summer and between day and night. It is the bidder's responsibility that the offered equipment / configuration be appropriate for the following locations and climatic conditions:

Latitude	18° 31' N
Longitude	73° 55' E
Elevation	558 m
Temperature range	1° to +50° C (air temperature)
Relative humidity range	10 to 100%

2.2 Units

Measurement units of all the equipment / systems to be procured shall be metric.

2.3 Accessories and Tools

All accessories, tools and fixtures required for installation and dismantling/ remounting of the equipment shall be treated as a part of the supply for each type of equipment. Devices and instruments required for sensor re-calibration shall be offered separately.

2.4 Documentation

The bidder must submit full documentation, including user's manuals and guidelines for operation and maintenance in English, for all equipment and software components supplied. In addition a project-specific system operation manual has to be prepared, including

- Specific equipment layout;
- A procedural handbook;
- System block diagrams (logical connections);
- Wiring diagrams;
- Interface specifications, including communication protocols and configuration modes;
- Software licenses.

The documents will also be transformed in to web-based helpline. The manual shall be provided both as hardcopy (2 copies) and on CD-ROM/ Pen Drive media.

3 .Training Component

3.1 Training Program

The Bidder is required to provide an extensive training programme for the system. The training set forth in the following paragraphs is a minimum requirement and the bidder should propose any additional training that he considers critical for long term success of the system operations.

The Bidder is expected to provide an outline or table indicating the contents of each of the required courses. The table shall describe the specific topics to be covered for each day of the training period.

The Bidder is responsible for the salaries of the training instructors and all training materials. The training is to be imparted at CWPRS.

3.2 Training in General Operation

Training shall be provided by the bidder in several phases as required for the system. The training shall include both classroom and field trainings and will be continued during Operation& maintenance (O&M) period. The bidder is required to have hydro-meteorological equipment specialists or personnel conversant in the field. The training shall include:

Sl. No.	Description	Numbers of training sessions/Year	Number of Participants per session
1	User Training Course for working staff.	<ul style="list-style-type: none">• 2 no. for the first year• 1 no. in second year• 1 no of training in any of the subsequent	10

		years of AMC	
2	Operation and Maintenance course (two weeks). Course topics will include sensor calibration, data logger configuration, data downloading, data retrieval, collection, compilation, processing, maintenance requirements, and procedures for equipment configuration, installation, site testing and commissioning.	<ul style="list-style-type: none"> • 1 no of training in each year of first two years • 1 no of training in any of the subsequent years of AMC 	5
3	Design, operation and maintenance of the database at Central Data Centre at CWPRS including back-up, recovery and web-services.	<ul style="list-style-type: none"> • 1 no of training in each year of first two years • 1 no of training in any of the subsequent years of AMC 	5
4	Specialized Training for Maintenance Technicians i.e., O&M	<ul style="list-style-type: none"> • 1 no of training in each year of first two years • 1 no of training in any of the subsequent years of AMC 	5

The training course will take place at *CWPRS*. In case of formal training, the *CWPRS* will provide classroom and other logistics. The Bidder will facilitate the training professional and the training materiel. On-the-job training will be provided by the Bidder in conjunction with the installation of AWS stations and during the course of maintenance as required.

The Bidder shall prepare a training course plan and include the same in the Bid Document. These trainings will be scheduled as described above for refreshing the trained staff and training of additional staff.

The classroom training, hands on experience and troubleshooting will be prepared as video for easy access and will be posted on the web. All training modules will be also provided as a media file (Windows Media Player Compatible) on a USB Drive. Five copies in hard copy and CD media shall be required.

4. Installation Requirements

Data Collection Platform (DCP)

The AWS should be installed in such a manner that the data logger, batteries, is located well above expected high water to ensure that the instruments are not submerged.

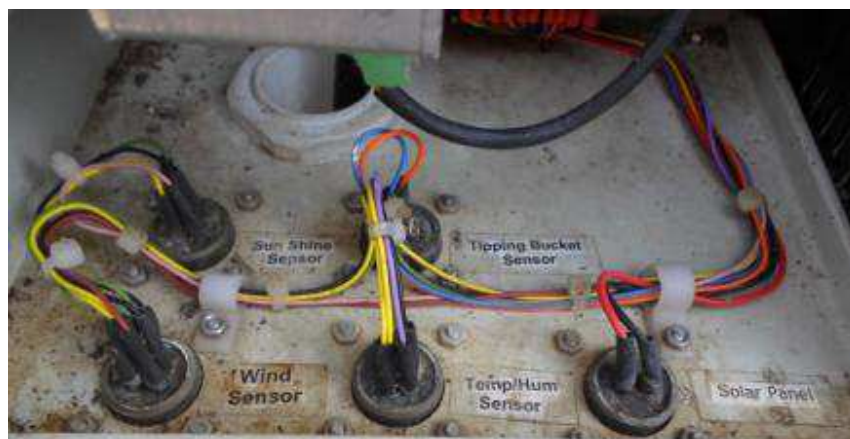
4.1.1. Lightning Protection

AWS shall employ a grounding system that will protect the electronic equipment from electrical surge caused by lightening. The system will consist of a single point grounding system which will tie all grounding wires to a copper grounding plate. The plate will then be connected with a copper grounding strap to a grounding rod. The Bidder will provide all the components for this installation and properly install the Single Point Grounding System at the station.

4.1.2. Enclosure and Wiring Specifications

The installation of AWS will consist of a tamper proof enclosure that will be installed outdoors. The enclosures must come equipped with a keyed lock where no other tool can be used to open the enclosure other than using the correct key. The enclosure must be sealed and secured in a NEMA type 4 enclosures as to prevent water and insects from entering the enclosure. Wires leading in and out of the enclosure must be properly secured and protected from sharp edges. Electrical or any other kind of tape to protect wires leading in and out of the enclosure will not be acceptable.

Instruments should be secured in an orderly fashion inside of the instrument shelter and all wiring and cables should be well organized and clearly labeled and secured (see figure below).



AWS Sensors well organized in an orderly Fashion

The DCP will allow programmable measurement times and data collection intervals. The measured data will be stored on the DCP, and utilize data storage that will drop off (over write) the oldest data as new data stored, through the DCP is required to store a minimum of 12 months of data before any data drops off. The table below provides a guideline to indicate how often the data should be measured and logged. However the time interval should be user selectable as and when required.

Parameter	Unit	Time Interval
Temperature	C	15 minutes
Humidity	%	15 minutes
Wind Speed	ms ⁻¹	15 Minutes
Wind Direction	Deg True	15 minutes
Pressure	hPa	30 minutes
Radiation	Wm ⁻²	30 minutes
Accumulated Rainfall from TBR	mm	Each tip event or 1 min
Battery Voltage	V	1 hour

5. Automatic Weather Station

The automatic weather station should be equipped to measure following parameters on real time basis:

- Rain fall
- Air Temperature
- Relative Humidity
- Solar Radiation
- Wind Speed
- Wind Direction
- Atmospheric Pressure
- Snowfall sensor

5.1 Specifications for Installation

AWS stations will be placed in open fields and away from any obstructions that may disturb the measurements. WMO guidelines should be followed during the installation in the selected site at CWPRS. The AWS will require a 10 m tower. The hardened enclosure will be attached to the tower at 1.5 m above the ground. Then temperature/ relative humidity will be mounted at 2 m above the ground and sufficiently away from any objects that may produce long wave radiation. The wind speed/direction sensor will be place that the top of the 10 m tower. The rain gauge will be placed away from the tower, at least 3 m from the tower, and no closer than the 2 times the difference in height (top of the rain gauge to the top of the nearby objects) to other objects. INSAT Antenna will be mounted as per WMO/ BIS Guidelines. The tip of the rim of rainguage should be about 0.50m above ground. Same is the criteria for TBR measuring snowfall. Radiation sensor should be place at a height of 3 m above the ground level. Pressure sensor should be placed at a height of 2.0 m. INSAT Antenna will be mount at tower according to WMO/BIS Guidelines. The photograph of AWS mounted with all the sensors is attached.

5.2. Specifications for Civil Works

5.2.1 Tower Foundation, Rain Gauge foundation, foundation of Anchor Rod and Guy Rope

It will be done by the bidder as per WMO/ BIS standards and in consultation with the officers of CWPRS.

5.2.2 Proportions for concrete foundations

Prevailing standards as per site condition and requirement will be adopted by the Bidder in consultation with the CWPRS officers

5.2.3 Painting

The tower should be painted properly by Bidder to avoid rusting.

All concrete foundations shall be painted using white cement by the Bidder.

6 . Operational Requirements

The project requires the Bidder to provide System Specialist conversant with handling AWS, Telemetry, Data Logger, Server to fill the tasks of handling computer systems & software support along with installation of whole system. **The Specialist shall visit CWPRS at least once in a month for checking and preventive maintenance and for periodical reports.** The system specialist will take supervision of the Whole System from CWPRS. Regular dialogue is required between the Bidder and CWPRS. The specialist will have a firm grasp of the handling of AWS and its components, associated software and has the capability of training CWPRS officials as requested. The bidder's representative would assist in putting the data on web as required by CWPRS. The specialists will also be responsible for operating the RTDAS software, Time Series software, and any other software that is procured as part of this tender. **These services will be valid during warranty and AMC period.**

7 . Warranty Period & AMC Period

The warranty period shall begin immediately after the whole system has been commissioned and Final Acceptance certificate issued. Whole System (AWS, Data Logger, INSAT, GSM/GPRS, Data Acquisition system (Laptop), server with backup , SIM cards) Should have warranty of 2 Years and subsequent AMC for the same is for 5 years excluding Data Acquisition system (Laptop) and server. The Bidder will be responsible to replace faulty or damaged equipment supplied through this contract. The bidder is responsible to rectify any operational issue / Software issue related to whole system.

The Bidder will electronically record all maintenance activities on software specified in this document. The Bidder will provide quarterly maintenance reports to CWPRS. The bidder may also be required to perform ad-hoc queries that are requested by the purchaser. Further explanation of the quarterly maintenance reports can be found in the "Maintenance Reports" section.

The costs of transportation and ancillary equipment and tools will be the responsibility of the bidder. The **Specialist from bidder** will restore station/sensor outages within 5 days of the outage occurring. This will mean that the **Specialist from bidder** will be at CWPRS to help reduce response time and meet the requirement of AWS outages lasting no longer than 5 days. The Software Specialists will be tasked to overseeing the collection of data, managing system software, and reprogramming **if required.**

7.1 Operation and Maintenance

The bidder shall provide a bid for Operation & Maintenance (O&M), which covers whole System (AWS, Data Logger, INSAT, GSM/GPRS, Data Acquisition system (Laptop), server with backup , SIM cards) Should have warranty of 2 Years and subsequent AMC for the same is for 5 years excluding Data Acquisition system (Laptop) and server following the final acceptance. This will include the following activities:

7.1.1 Information Technology Specialists:

Provide quarterly operation and maintenance reports on computer operation, including the documentation of down time, other related activities as directed by the purchaser.

7.1.2 Maintenance Reports

There is a requirement for the bidder to provide quarterly operation & preventive maintenance reports during the O&M period. The reports are due on the 7th day of 4th month documenting the previous 3 month's activity. The reports must include an accounting of all visits and actions taken.

7.2 Testing and Inspection

It is the Bidder's responsibility to ensure that the equipment is sufficiently tested prior to shipment and installation. During final acceptance testing, the Bidder will have to demonstrate full functionality and performance of all system components according to specifications. Prior to final acceptance, all expenditures related to unsatisfactory performance of the equipment, such as the costs of repairs, additional site visits, shipping costs etc., will be at the Bidder's expenses.

The costs for all tests and for all inspections to be made under the contract shall be borne by the Bidder and shall be deemed to be included in the Contract Price with the exception of the Purchaser's costs for witnessing tests. The following inspections and tests shall be performed:

7.2.1 Factory Acceptance Test

Prior to system shipment, the bidder shall conduct a Factory Acceptance Test (FAT). The FAT shall be conducted at the bidder's facilities and shall demonstrate "end-to-end" performance of the system components. In order to avoid delays, the factory acceptance testing shall not be witnessed. However, the bidder is required to write a FAT report that will describe the test layout, the individual testing results for each component, as well as any problems found. All deficiencies revealed by testing shall be rectified by the bidder at his own expenses and to the approval of the Purchaser. Rectified components shall be subject to re-testing.

7.2.2 Receiving Inspection

The system is to be inspected at CWPRS, after receipt of the shipment is received and delivered. The Bidder is to arrange for this receiving inspection as well as for customs clearance if required and delivery to CWPRS.

7.2.3 Site Installation and Acceptance Tests

The Bidder will install all the equipments and will undertake site tests of each lot of equipments included in the Schedule of Requirements. The exact locations for installation by Bidder shall be decided by the Purchaser.

After final configuration and programming, the Bidder will conduct an “end-to-end” operational test the station. A formal check list shall be followed and the results of the tests shall be recorded. The Purchaser’s person will be trained in conducting the same site acceptance tests. A Site Acceptance Test will be passed if all sensors and data collection platforms obtain and store correct values for a period of 24 hours.

7.2.4 Operational Test (OT)

Operational testing should be done on end to end basis for AWS to be installed. The test for AWS would include but not limited to:

- Measurement of data by sensors and recording in Data-logger and server for all mode of communication as specified in section 5 of Technical specification (Telemetry).
- Quality check on data and application of filters for minimum, maximum and rate of change limits
- Presentation of quality checked data in tabular and graphical format on local workstations / Server
- Continuous operation of the system for at least 72 hours period at CWPRS

The operational testing can be performed at CWPRS. During OT, all hardware and software components of this real time network have to be tested. The OT will be considered to be successful if all components as a whole have been operating without problems during at least 72 hours period. OT will be witnessed by the Purchaser’s designated representatives at CWPRS. If it passes OT it will go to the next stage, which is Final Acceptance

7.3 Final Acceptance

The final Acceptance shall be provided after test for “end-to-end” performance of the entire system for a period of one month. The bidder shall demonstrate and document that the system correctly generated 95% of all expected data (normally scheduled data collections) for the one-month period. The Bidder will produce a report documenting the quantities of data expected / received and indicating the success / failure of the test. The test will be repeated until the 95% success level is achieved.

All equipment failures will be counted except those that can be specifically determined to be “acts of God”. Failure of stations due to acts of God (natural disasters or other incidents) will not count against the 95%. Equipment needed for testing shall be provided by the Bidder.

When the system has passed the Final Test, the Bidder can apply for Final Acceptance. When Final Acceptance is given, the system will be officially considered to be under Warranty.

Before awarding the final acceptance, all the contractual requirements like trainings, user manuals, tool kits, installation and commissioning of Data centre including all the software and hardware etc must be complete in all respect.

Signature of the Bidder

2. COMPLIANCE STATEMENT For Supply, Installation, Testing and Commissioning of, AWS, TBR, INSAT system, Data logger, Data acquisition system

1. Automatic Weather Station (AWS)

1.1 AWS Sensors

Feature	Value	Bidder's Compliance Yes/No/ Deviation if any
Site Conditions		
Ambient	1 to 50 degrees C	
Humidity	10% to 100%,	
Altitude	500 to 550 m	
Temperature Sensor		
Sensor Type	Resistance type Temperature Sensor	
Range	-40 to 60 Degree C	
Resolution	± 0.1°C	
Accuracy	-40 ° C to +40 with in ±0.1°C and above it ±0.2°C	
Response	10 sec or lesser	
Self-aspirated	To ensure continuous supply of air, free from turbulence, water droplets and radiation	
Output Interface	Digital output compatible with Data logger	
Power Supply	12V DC	
Accessories	All Accessories for mounting the instrument e.g. special cross arm clamps or flag, if any shall be provided	
Humidity Sensor		
Sensor Type	Capacitive/ Solid State Humidity Sensor	
Range	0 to 100 %	
Resolution	1%	
Accuracy	±3% or better	
Response	10 sec or lesser	
Output	Digital output compatible with Data logger	
Wind Speed and Direction Sensor		
Sensor Type	1.Ultrasonic sensor (No moving Parts)	
Range	60m/s for speed ;0-360 Degree	
Resolution	0. 1 m/s for speed; ±1 Degree for direction	
Accuracy	±0.5 m/s for speed≤5m/s& 10% beyond 5m/s ; ±5 Degree or better for wind	
Response	Less than 1 sec lag in operating range	
Accessories	All Accessories for mounting the instrument e.g. special cross arm clamps or flag, if any shall be provided	

Sensor Type	2. Cup anemometer (solid state magnetic sensor) for wind speed	
Range	0.5-89m/s	
Resolution	0.1m/s	
Accuracy	±0.5 m/s for speed≤5m/s& 10% beyond 5m/s ;	
Output	Digital output compatible with Data logger	
Response	10 sec or better	
Sensor Type	Wind vane and potentiometer for wind direction	
Range	0-360 Degree	
Resolution	1 Degree	
Accuracy	±7%	
Response	10 sec or better	
Output	Digital output compatible with Data logger	
Pressure Sensor		
Sensor Type	Solid state	
Range	600 - 1200 hPa	
Resolution	± 0. 1 hPa	
Accuracy	± 0.2 hPa	
Response	10 sec or better	
Output	Digital output compatible with Data logger	
Solar Radiation Sensor		
Sensor Type	ISO Secondary class Pyranometer	
Spectral Range	400-1100 nm	
Range	0-2000W/m ²	
Resolution	5 W/ m ²	
Accuracy	2 % or better	
Response	10 sec or better	
General Features		
Material	Corrosion Resistance Metal (Stainless steel/ Aluminum or PVC)	
Tools	Complete tool kit for operation and routine maintenance	
Manuals	Full Documentation and maintenance manual in English	
Accessories	Sensor Mounting support, cables and other accessories as required	
Output Interface	Analogue output Compatible with Data logger	
Power Supply	12 V DC or switch rated for 12 VDC	

Note: Calibration certificate for each sensors have to be provided by the vendor at the time of delivery

1.2. Mast and Support

Features	Value	Bidder's Compliance Yes/No/ Deviation if any
Height	10 m(Height adjustable for installing the sensors)	
Resistance to wind	Including guys rope and all accessories / tools for mast mounting must be able to resist a wind speed of 110 km/hour.	
Resistance to corrosion	Corrosion free(metal).	
Material	Aluminium or stainless steel	
Resistance to wind	Able to resist a wind speed of 110 km/hour.	
Resistance to corrosion	Corrosion free.	
Components	<ul style="list-style-type: none"> - lightning rod, ground rod and conductors - lightning / over voltage protection devices for sensors, data logger, transmitter and power supply, as required 	-

2. Tipping Bucket Rain gauges

2.1 Tipping Bucket Rain gauge (Type-I)

Feature	Value	Bidder's Compliance Yes/No/ Deviation if any
Site Conditions		
Ambient Temperature	1 to 50 degrees C	
Humidity	10% to 100%,	
Altitude	500 to 550 m	
Sensor		
Sensor Type	Tipping Bucket reed switch	
Intensity Range	0-250 mm/h or better	
Resolution	0.5 mm	
Accuracy (Intensity)	2% or better	
General Features		
Output Interface	Digital output compatible with Data logger	
Material	Corrosion Resistance Metal (Stainless steel)	

Enclosure	Ability to service tipping buckets without involving the re-leveling of the gauge.	
Protection	NEMA 4 or IP65	
Tools	Complete tool kit for operation and routine maintenance	
Manuals	Full Documentation and maintenance manual in English	
Accessories	Sensor Mounting support, cables and other accessories as required	
Specific Features		
Collecting Funnel Diameter	200 mm or 8 Inch or equivalent	
Insect Screen	Insect covers on all openings should be provided	

2.2 Tipping Bucket Raingauge (Type-II)

Feature	Value	Bidder's Compliance Yes/No/ Deviation if any
Site Conditions		
Ambient Temperature	1 to 50 degrees C	
Humidity	10% to 100%,	
Altitude	500 to 550 m	
Sensor		
Sensor Type	Tipping bucket reed switch	
Range	0 -150mm/hr or better	
Resolution	0.1mm or better	
Accuracy (Intensity)	2 % or better,	
Collecting Funnel Diameter	200 mm or 8 Inch or equivalent	
General Features		
Output Interface	Digital output compatible with Data logger	
Power Supply	12 V DC or switch rated for 12 VDC	
Material	Corrosion Resistance Metal (Stainless steel)	
Enclosure	NEMA 4	
Tools	Complete tool kit for operation and routine maintenance	
Manuals	Full Documentation and maintenance manual in English	
Accessories	Sensor Mounting support, cables and other accessories as required	

2.3 Tipping Bucket Raingauge (Type-III, for Snow (hourly) measurement)

Feature	Value	Bidder's Compliance Yes/No/ Deviation if any
Site Conditions		
Ambient Temperature	-40 to 50 degrees C	
Humidity	10% to 100%,	
Altitude	2000 to 6000 m*	
Sensor		
Sensor Type	Tipping bucket reed switch	
Range	0 to 700mm/hr	
Resolution	0.2mm or better	
Accuracy (Intensity)	0.2 mm/hr; $\pm 2\%$ @ < 250 mm/hr (9.8 in/hr) $\pm 3\%$ @ 250 to 500 mm/hr (9.8 to 19.7 in/hr)	
General Features		
Output Interface	Digital output compatible with Data logger	
Power Supply	Main power: 10- 30VDC, SDI -12 Power: 9-16 VDC	
Material	Corrosion Resistance Metal (Stainless steel)	
Enclosure	NEMA 4	
Tools	Complete tool kit for operation and routine maintenance	
Manuals	Full Documentation and Maintenance manual in English	
Accessories	Sensor Mounting support, cables and other accessories as required	
Specific Features		
Funnel Diameter:	200 mm (7.87 in)	

3. INSAT System, Server, GSM/GPRS, Monitor and Backup with Battery (Reception/Transmission Unit)

3.1 GSM/GPRS Modem

GSM / GPRS Modem (for telemetry of Data to server and communication with 2 Nos Electronic display boards)

Feature	Value	Bidder's Compliance Yes/No/ Deviation if any
Ambient Site Conditions		

Operating Temperature	From -20 ⁰ C to +60 ⁰ C	
Performance	Data Reception availability of 95% or better	
Form factor	The Transmitter should either be integral part of data logger specified above, or it should be supplied as independent unit compatible with supplied data logger	
Specific Features		
Communication Direction	Utilize GPRS network for two-way TCP/IP (INTERNET) connection	
VPN protocol	Radio to utilize VPN protocol	
Transmission trigger	Data collection to be triggered by interrogation from Data Centre, or by event based transmission triggered by remote site	
Power Saving	Ability to disable interrogation system in order to save power at remote site	
Communication Protocol	Data transmission to execute HTTP Post or FTPS to transmit data to the Data Centre	
Accessories	All associated equipment, including Antenna all cables and mounting hardware	
Antenna features		
Frequency range	900 MHz: 824-960 MHz/1800MHz:1710-1880 MHz	
Im Impedance	50 ohms	
VSWR	≤ 2.0	
Radiation	Omn-directional	
Operating temperature	-10 to + 60 degrees Celsius	
connector	SMA adaptable to GSM/GPRS modem	
cable length	As required	

Note- 1) Data will be transmitted from Data Logger to Display Boards through server.
2) Validated data from server will be transmitted to two Electronic Display Boards via GSM/GPRS or through cable. The cost of SIM cards along with recharge for entire warranty & AMC period at Data logger and Server will be borne by Bidder.

3.2 INSAT Radio

Feature	Value	Bidder's Compliance Yes/No/ Deviation if any
Operating Temperature	From -20°C to + 60°C	
Environment Relative Humidity	0 to 100%	
Carrier Stability	In steps of 100 Hz	

	from 402.0 MHz to 403.0 MHz	
Career Frequency	402 - 403 MHz	
Modulator	PCM/BPSK	
Data coding	NRZ(L)	
Output Power	3-10 W, user settable	
Data Bit Rate	4.8 kbps	
Frequency Stability		
a) Long term	Transmit frequency inaccuracy including aging of oscillator should not exceed ± 400 Hz per year. Oscillator/synthesizer should have provision to adjust for the long-term drift	
b) for temperature	$\pm 0.20^{\circ}\text{C}$ or better for $+10^{\circ}\text{C}$ to $+60^{\circ}\text{C}$ $\pm 0.35^{\circ}\text{C}$ or better for -20°C to $+10^{\circ}\text{C}$	
Signal Bandwidth	6.0 KHz maximum or better	
Output Power	3-10 W (settable)	
Power Stability	± 1 dB	
Spurious	-60 dB or better	
Harmonics	-40 dB or better	
Antenna cable	LMR 400 grade or better	
Performance	Data reception availability of 99% or better	
Operating power	Switched 12V D.C controlled by data logger.	
Form factor	The transmitter should either be integral part of the data logger specified above, or it should be supplied as independent unit compatible with the supplied data logger.	

Yagi Antenna		
Polarization	LHCP or RHCP, switchable in field	
Gain Minimum	11 dbi or better	
Centre Frequency	402-403 MHz	
Mounting	Proper mounting and Pointing arrangement for 360 degree azimuth and elevation adjustment	
Operating Wind speed	250 kmph	
Wind Survival	300 kmph	
Material	Rust-proof and oxidation-proof	
Operating rain rate	100 mm/hr and water proof	
Specific Features		
Satellite System	INSAT radio system to be used on the INSAT satellite operated by ISRO	
Certification	Certificate of acceptance required by ISRO and/or IMD/ CWC/NPMU as part of the bid package	
Accessories	All associated equipment, including GPS, GPS Antenna, INSAT antenna, all cables and mounting hardware .	

INSAT Antenna will be installed at AWS site.

Note- 1) The selection of frequency and mode of transmission shall be through software settings only.

2) If any sensor is not connected then it should transmit '___' Characters in place of the sensor value.

3.3. Server Specifications:

Network Server		Bidder's Compliance Yes/No/ Deviation if any
Processor	Intel® Xeon® processors E5-2620 v4 series or better	
Memory	32 GB RAM scalable up to 256 GB with minimum 2400HZ frequency or better	
HDD	Hard Drive capacity of a minimum of 2 TB with RAID 5 HDD or higher SSD or better	
RAID Support -	12Gbps dedicated slot for the first RAID; support for up to four RAID adapters	
Network Controller	2 x 10/100/1000 MBPS, minimum 2x1Gb Ethernet controller	
Ports	Minimum 2 x USB 2.0 front, 2 x USB 3.0 rear, 1 x USB 2.0 internal for hypervisor/1 front (optional) and 1 back	
System Management	Minimum IMPI 2.0 complaint, LAN connectivity to provide remote console and management.	
Operating System	Latest Windows Server with media and manual, Antivirus with Internet Security for all inbound and outbound HTTP, SMTP & FTP traffic across the network.	
Power Supply	1/2 redundant 550W AC/750W AC/ 900W AC/ 1500W AC	
Certification	ISO 9001:2008, 14001:2015, certified manufacturer for all components.	
Mounting	Rack Mountable server with rack mounting kit. The servers will be fixed in a rack with casters and glass door. The architect of servers should be 100% redundancy with heat beat/status being reported to the administrator on E-mail/SMS in case of failure event	
Keyboard	104 keys or higher OEM USB Keyboard	
Mouse	Optical Scroll with USB interface.	
Monitor	24 inch or better Full HD ; Resolution :- 1920*1200 pixel	
Graphics	2GB Graphics or better	
Backup	Battery for Backup of Server unit is 3days and	

	Reception of Telemetry unit is 21 days.	
Model	will be specified as the latest available at the time of delivery with manuals, will have a minimum of bays to accommodate the hot swap disk bays.	
Installation and Commissioning	Supplier should Install and commission Server as per specifications for both software and hardware.	
Manuals	Operation Manual, User Manual, Trouble shooting Manual in English Language in both soft and hard copy format along with Server.	

3.4 Real Time Data Acquisition System (RTDAS) for Server :-

Sr. No.	Features	Bidder's Compliance Yes/No/Deviation if any
1	RTDAS software simplify the weather monitoring process and aids in data communication with the Data logger, Data Acquisition System and also in data display and analysis, The software should be capable of generating daily, weekly, monthly and annual summaries, extremes (Low/ High) and charts.	
2	System should have reliable , field proven State of Art, High Speed Communication	
3	Software shall be built around MS Windows Operating System.	
4	System should be expandable for future requirement.	
5	System to display Present as well as History trends/charts/data.	
6	Software should able to validate the data.	

Additional Requirements :-

Sr. No.	Features	Bidder's Compliance Yes/No/Deviation if any
1	Whole System (AWS, Data Logger, INSAT, GSM/GPRS, Data Acquisition system (Laptop), server with backup , SIM cards) should have warranty of 2 Years and subsequent AMC for the same is for 5 years excluding Data Acquisition system (Laptop) and server.	
2	Required SIM cards at AWS site & Server for uninterrupted GSM/GPRS communication with Electronic Display Boards are to be provided by the bidder along with subscription for entire warranty and AMC period. Cost these shall be borne by the bidder	

	during warranty.	
3	Required software provision and development of Real Time Data Acquisition system (RTDAS) is to be done by bidder.	
4	Any additional requirement, module and/or accessories, if required, should be suggested by the bidder and price of the same should be included in the bid.	
5	Data centre is the respective server where data is expected to be received. Data through GSM/GPRS will be received at CWPRS Server. In case of INSAT based telemetry, the Data Centre is Earth receiving station (ERS) server maintained by IMD Pune/ CWC Delhi	
6	The project requires the Bidder to provide System Specialist conversant with handling AWS, Telemetry, Data Logger, Server to fill the tasks of handling computer systems & software support along with installation of whole system. The Specialist shall visit CWPRS at least once in a month for checking and preventive maintenance and for periodical reports. The system specialist will take supervision of the Whole System from CWPRS. Regular dialogue is required between the Bidder and CWPRS. The specialist will have a firm grasp of the handling of AWS and its components, associated software and has the capability of training CWPRS officials as requested. The bidder's representative would assist in putting the data on web as required by CWPRS. The specialists will also be responsible for operating the RTDAS software, Time Series software, and any other software that is procured as part of this tender. These services will be valid during warranty and AMC period.	

4. Data Collection Platform

4.1 Power Supply

Feature	Units	Bidder's Compliance Yes/No/ Deviation if any
Battery		
Voltage	12 V low current drain (SMF) – easily available in Indian markets	
Type	Sealed Maintenance free	
Capacity	To provide 21 days of backup	
Charger	Charger from AC mains with protection	
General		

<p>The supplier should determine optimal batteries, such that system should be operational for at least 21 days in the absence of charging. It should provide power 12V,18V or as required for the various sensors and data logger installed in AWS.[Supply is from AC Main]</p>	
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4.2 Data Logger for Multiple Sensors of AWS and software

Technical specification for Data logger

Site Condition		Bidder's Compliance Yes/No/ Deviation if any
Ambient temperature	1 to 50 degrees C	
Relative humidity	10% to 100%,	
Altitude	500 to 550 m	
General features		
Model	Well proven and widely used model, produced by a primary brand name and tested in a large number of installations. Provide manufacturer's certificate that the model proposed has been in production for at least 3 years.	
Design	Open design, operating with a wide variety of sensors.	
Firmware Operating system	Multi tasking operating system capable to log data and transmit at same time (Licensed version).	
Change of setup	Change of setup does not affect logged data.	
Plug and play	Plug and play ease of setup using a windows based graphical views.	
Resolution	ADC resolution ≥ 16 bit.	
Conversion Accuracy	+/- 1 LSB	
Sample intervals	1sec to 24 hours in 1 sec increments (user selectable)	
Visual Display	LED/LCD to operate in the range(-10 ⁰ C to 55 ⁰ C) viewing current data and setting values	
Watch dog timer	System should reset upon microprocessor failure	
Real time clock	GPS synchronized, stability: 1 ppm/year or better	
Flash memory	Non-volatile Flash memory that can store one year of data and expandable to a minimum of 1GB.	
Recording Interval	Individual recording intervals for each sensor/parameter	
Battery/Power Supply	12 V chargeable maintenance free 65AH capacity , low current drain (quiescent ≤ 10.0 mA)	
Triggering	User configurable alarms (triggering)	

Voltage level	Monitoring of voltage level.	
Internal clock	Internal clock with drift less than 2 seconds per year or using GPS	
Input Interface	As required for the sensors	
Input/ Output interface	<p>Should match minimum requirements :</p> <ul style="list-style-type: none"> - for use with AWS, 16 analogue channels and 8 digital input / output channels needed. - Analog /Digital/Pulse Inputs:- Data Logger should support for all data received from AWS and TBR sensors . - The SDI-12, RS232, RS 485, RJ 45 and USB interfaces are required to connect to different purposes. - output needed for: <ul style="list-style-type: none"> d) manual readout. etc e) direct data downloading to a USB flash drive without the need for a laptop or data retrieval device. f) Port for configuration :- One Serial Port RS232 and USB for communication with Laptop and programming d) 2 ports for communication with Telemetry (GSM/INSAT) device. Note: The Data logger should have at least 2 ports for data transmission via Telemetry devices (GSM/INSAT). Both Telemetry and Electronic Display Boards (EDB) systems should work simultaneously for redundancy. The type of port required for telemetry device may be different (Serial, RS 485, RS 232, RJ 45, etc) and proposer may offer multiple models having different combination of ports. e) Display Port :- Optional port for connecting external screen for data in running text. Note: The port for attaching external display device to show data as running text. 	
Enclosure	For wall-mounting in a shelter / enclosure with protection IP65 (NEMA 4) or better	
Operating System	Windows software for system configuration / communication.	
language	English version	
Licenses	All required licenses included	
User levels privileges	Different user levels, system of user rights / passwords, access restricted to authorised personnel.	
Data security	Redundant storage, periodic automatic backup	

	procedures.	
System integrity	System integrity check procedures	
Others	AWS software simplify the weather monitoring process and aids in data communication with the Data logger, Data Acquisition System and also in data display and analysis. (The software should be capable of generating daily, weekly, monthly and annual summaries, extremes (Low/ High) and charts-- should be available in server)	
Accessories	Serial cable + adaptor (if required) for notebook connection. All accessories (fixing units etc.) as required	
Tools	complete tool kit for installation and routine maintenance giving full detail (number of pieces and type)	
Manuals	Full documentation and maintenance instructions in English (2 copies).	
Internal battery	Internal battery backup for clock lithium battery, storage 2 years	
General Features	<ul style="list-style-type: none"> a) Alarms and Triggers at server side b) Flash Memory over writing option c) Self diagnostic facility d) Statistical Data Analysis Min/Max, Cumulative, Instantaneous, Average. e) Ability to add or remove sensors f) Keypad for displaying or transmitting data to memory stick, configuration of data logger and sensors. g) If any sensor is not connected then it should transmit '___' Characters in place of the sensor value. 	

4.3 Enclosure

Site Condition		Bidder's Compliance Yes/No/ Deviation if any
Ambient temperature	1 to 50 degrees C	
Relative humidity	10% to 100%,	

Altitude	500 to 550 m	
Equipment	To accommodate data logger, sensor cards, battery and regulator, transmitter unit, over voltage protection devices, etc.	
Material	Material should withstand hostile environment and provide protection against vandalism and be agreed with the Purchaser. Protection IP65 (NEMA 4) or better.	
Locks	safety locks of good quality	

5. Annual Maintenance Contract for items:

	Annual Maintenance Contract	Bidder's Compliance Yes/No/ Deviation if any
Automatic weather Station (with sensors temperature, humidity, wind speed and direction, radiation, pressure; and mast of 10m height)	AMC for 5 years after regular warranty of two years	
Tipping Bucket Rain Gauge	AMC for 5 years after regular warranty of two years	
INSAT System, GSM/GPRS, Monitor and Backup with Battery	AMC for 5 years after regular warranty of two years	
Data Logger with GSM/GPRS	AMC for 5 years after regular warranty of two years	

6. Data Acquisition System (Laptop) - Qty- 2 Nos

Feature	Value	Bidder's Compliance Yes/No/ Deviation if any
Software		
Operating System	Licensed windows 10 professional or better	
Version	English language version	
General Features		
RAM	8 GB	
Hard Disk	1 TB	
Processor	Intel Core i5 or better	
Rotation Speed (Storage)	5400 RPM or better	

CPU Speed	2.8 GHZ or better	
Memory Speed	1600MHz or better	
Battery/Power Supply	Suitable and backup for 6 hours.	
Visual Display (Monitor)	15 inch LED full HD; Resolution = (1920 *1080)	
USB port	6	
Optical Device	DVD Read Write 16X	
Graphics	2 GB or better	

Bidder's Signature

4. Inspections and Tests

The following inspections and tests shall be performed:

The testing and commissioning shall be carried out as per the section 7.2 to 7.3 of Terms and Conditions

PART 3 – CONTRACT & CONTRACT FORMS

Section 4 - General Conditions of Contract

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Section 4 - General Conditions of Contract

1. Definitions

The following words and expressions shall have the meanings hereby assigned to them:

- (a) "Bank" means the World Bank and refers to the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).
- (b) "Contract" means the Contract Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein.
- (c) "Contract Documents" means the documents listed in the Contract Agreement, including any amendments thereto.
- (d) "Contract Price" means the price payable to the Supplier as specified in the Contract Agreement, subject to such additions and adjustments thereto or deductions there from, as may be made pursuant to the Contract.
- (e) "Day" means calendar day.
- (f) "Completion" means the fulfillment of the Related Services by the Supplier in accordance with the terms and conditions set forth in the Contract.
- (g) "GCC" mean the General Conditions of Contract.
- (h) "Goods" means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Purchaser under the Contract.
- (i) "Purchaser's Country" is India.
- (j) "Purchaser" means the entity purchasing the Goods and Related Services, as specified in the Contract Agreement.
- (k) "Related Services" means the services incidental to the supply of the goods, such as insurance, installation, start-up, training and initial maintenance and other such obligations of the Supplier under the Contract.
- (l) "Subcontractor" means any natural person, private or government entity, or a combination of the above, to whom any part of the Goods to be supplied or execution of any part of the Related Services is subcontracted by the Supplier.

- (m) "Supplier" means the natural person, private or government entity, or a combination of the above, whose bid to perform the Contract has been accepted by the Purchaser and is named as such in the Contract Agreement.
 - (n) "The Project Site," where applicable, means the place named in the Contract Agreement.
- 2. Fraud and Corruption**
- 2.1 If the Purchaser determines that the Supplier has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, as defined in the Bank's Procurement Guidelines, in competing for or in executing the Contract, then the Purchaser may, after giving 14 days' notice to the Supplier, terminate the Supplier's employment under the Contract and cancel the contract without prejudice to the other sanctions established in law.
- 3. Governing Law**
- 3.1 The Contract shall be governed by and interpreted in accordance with the laws of the Union of India.
- 4. Settlement of Disputes**
- 4.1 The Purchaser and the Supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.
- 4.2 If, after twenty-eight (28) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration by a sole arbitrator not below the level of retired Chief Engineer /Superintending Engineer (not connected in part or whole with this project in his service) to be appointed by Purchaser. Arbitration may be commenced prior to or after delivery of the Goods under the Contract. Arbitration proceedings shall be conducted in accordance with the rules of procedure specified in Arbitration and Conciliation Act 1996.
- 4.3 Notwithstanding any reference to arbitration herein, the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and the Purchaser shall pay the Supplier any monies due the Supplier.
- 5. Scope of Supply**
- 5.1 The Goods and Related Services to be supplied shall be as specified in the Contract Agreement.
- 6. Delivery**
- 6.1 The Delivery of the Goods and Completion of the Related Services shall be in accordance with the Delivery and

- Completion Schedule specified in the Schedule of Requirements.
7. **Supplier's Responsibilities** 7.1 The Supplier shall supply all the Goods and Related Services included in the Scope of Supply in accordance with GCC Clause 5, and the Delivery and Completion Schedule, as per GCC Clause 6.
8. **Contract Price** 8.1 Prices charged by the Supplier for the Goods supplied and the Related Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid.
9. **Terms of Payment** 9.1 The Contract Price shall be paid, **for domestic goods** as specified in the Contract Agreement as under:
- (a) **The contract price (100%) shall be paid to the supplier within thirty (30) days from the date of successful supply, installation, testing and commissioning of goods in all respect or the Acceptance Certificate issued by the Purchaser's representative whichever is later.**
 - (b) The Supplier's request for payment shall be made to the Purchaser in writing, accompanied by invoices describing, as appropriate, the Goods delivered and Related Services performed, and by the dispatch documents, packing list, Manufacturer's/Supplier's warranty certificate, and upon fulfillment of all other obligations stipulated in the Contract.
 - (c) Payments shall be made promptly by the Purchaser, within thirty (30) days after submission of an invoice or request for payment by the Supplier, and after the Purchaser has accepted it.
 - (d) **The payments shall be made in Indian Rupees to the Supplier under this Contract.**
- 9.2 The Contract Price shall be paid, **for imported goods** as specified in the Contract Agreement as under:
- 90% of the contract price of Indian Rupee (INR) shall be paid in **convertible currencies** through irrevocable **letter of credit** established in favour of the foreign supplier in a scheduled commercial bank in the supplier's country acceptable to the purchaser, upon submission of the following documents:
- a) Certified copy of the fax sent by the supplier to the purchaser
 - b) Supplier's signed commercial invoice showing contract number, description of the supplier goods, corresponding quantity, unit price and the total value and name(s) of the name(s) of the consignee(s) for the supplied goods.

- c) Original clean on board bill of lading marked freight pre-paid consigned to the interim/ port consignee evidencing description of these goods, quantities, relevant details about the contract number etc.
 - d) Packing list, identifying contents of each package.
 - e) Insurance policy or certificate in duplicate endorsed in blank with claims payable in India in the currency of the letter of Credit.
 - f) Manufacturer's/supplier's warranty certificate and supplier's factory inspection report.
 - g) Pre-dispatch inspection certificate issued by the purchaser's nominated inspection agency, if so specified.
 - h) Certificate of origin.
 - i) Supplier's certificate confirming that the required documents have been sent to all concerned.
 - j) Supplier's certificate confirming that the amounts shown in the invoice are correct in terms of the contract and that all the terms and conditions of the contract have been complied with for claiming this payment.
 - k) Any other document(s) and/or modification of above documents specified in the **terms and condition of the contract**.
- ii) The remaining 10% of the contract price of goods shall be paid in INR within 30(thirty) days of receipt of goods on submission of the claim supported by the acceptance / installation / commissioning certificate issued by the purchaser or the purchaser's nominated representative.

10. Taxes and Duties

10.1 The Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Purchaser (**i.e up to CWPRS, Pune**).

11. Performance Security

11.1 **The Supplier shall, within ten (10) days of the notification of contract award, provide a performance security for the performance of the Contract for an amount of 10 % of the contract value, valid up to 60 days beyond the date of completion of all contractual obligations of the supplier including warranty period.**

- 11.2 The Performance Security shall be in the form of a Bank Guarantee or FDR or crossed demand draft drawn in favour of **“Pay and Accounts Officer, CWPRS, Pune”** payable at Pune, which shall be issued by any Nationalized/Scheduled bank in India.
- 11.3 The Performance Security shall be discharged by the Purchaser and returned to the Supplier not later than twenty-eight (28) days following the date of Completion of the Supplier’s performance obligations under the Contract, including any warranty period.
- 12. Specifications and Standards**
- 12.1 Technical Specifications and Drawings
- (a) The Goods and Related Services supplied under this Contract shall conform to the technical specifications and standards mentioned in Section 3, Schedule of Requirements and, when no applicable standard is mentioned, the standard shall be equivalent or superior to the official standards whose application is appropriate to the Goods’ country of origin.
- 13. Inspections and Tests**
- 13.1 The inspections and tests shall be conducted by the Purchaser at the Goods final destination.
- 13.2 The Purchaser may reject any Goods or any part thereof that fail to pass any test and/or inspection or do not conform to the specifications. The Supplier shall either rectify or replace such rejected Goods or parts thereof or make alterations necessary to meet the specifications at no cost to the Purchaser.
- 14. Liquidated Damages**
- 14.1 If the Supplier fails to deliver any or all of the Goods by the Date(s) of delivery or perform the Related Services within the period specified in the Contract, the Purchaser may deduct from the Contract Price, as liquidated damages, a sum equivalent to **0.5%** of the price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of **10%** of the Contract value.
- 15. Warranty**
- 15.1 The Supplier warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in the country of final destination.
- 15.2 The warranty shall remain valid for **Two years** after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination/ Project site indicated in the Contract Agreement.
- 15.3 Upon receipt of such notice, the Supplier shall, within 30 days, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.

16. Extensions of Time

- 16.1 If at any time during performance of the Contract, the Supplier or its subcontractors should encounter conditions impeding timely delivery of the Goods or completion of Related Services, the Supplier shall promptly notify the Purchaser in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may at its discretion extend the Supplier's time for performance, in which case the extension shall be ratified by the parties by amendment of the Contract.
- 16.2 Any delay by the Supplier in the performance of its Delivery and Completion obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause 14, unless an extension of time is agreed upon, pursuant to GCC Sub-Clause 16.1.

17. Termination

- 17.1 Termination for Default
 - (a) The Purchaser, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Supplier, may terminate the Contract in whole or in part:
 - (i) if the Supplier fails to deliver any or all of the Goods within the period specified in the Contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause 16;
 - (ii) if the Supplier fails to perform any other obligation under the Contract; or
 - (iii) if the Supplier, in the judgment of the Purchaser has engaged in fraud and corruption, as defined in GCC Clause 3, in competing for or in executing the Contract.
 - (b) In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 17.1(a), the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Related Services similar to those undelivered or not performed, and the Supplier shall be liable to the Purchaser for any additional costs for such similar Goods or Related Services. However, the Supplier shall continue performance of the Contract to the extent not terminated.

18. Assignment

- 18.1 Neither the Purchaser nor the Supplier shall assign, in whole or in part, their obligations under this Contract, except with prior written consent of the other party.

Section 5 – Contract Forms

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1. NOTIFICATION OF AWARD

[On letter head of the Purchaser]

..... *[Date]*

To:

[Name and address of the Supplier]

Subject: Notification of Award for Contract No.

This is to notify you that your Bid dated ***[Insert date]***for execution of the ***[Insert name of the contract and identification number]***for the Accepted Contract Amount of ***[Insert amount in numbers and words in Rupees]***, as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by the Purchaser.

Contract Agreement to be executed is attached. You are requested to sign it with date and return it to the Purchaser within 10 days of the date of Notification of Award, along with the Performance Security for an amount of INR..... ***[Insert amount equivalent to 10% of the Contract value]*** valid up to..... ***[Insert date]*** in one of the forms stipulated in the GCC.

This concludes the Contract.

Authorized Signature: _____

Name and Title of Signatory: **B. Suresh Kumar, Scientist 'C', CPC**

Name of Agency: **Central Water and Power Research Station, Pune-24**

Attachment: Contract Agreement complete with Conditions of Contract

2. CONTRACT AGREEMENT

[The successful Bidder shall fill in this form in accordance with the instructions indicated]

THIS CONTRACT AGREEMENT is made

the *[insert: **number**]* day of *[insert: **month**]*, *[insert: **year**]*.

BETWEEN

- (1) **The Scientist ‘C’ Construction and Procurement Cell, Central and Power and Research Station, Khadakwasla, Pune-24**, an Office under the Ministry of Water Resources, River Development and Ganga Rejuvenation, Government of India and having its principal place of business at Sinhagad Road, Khadakwasla, Pune-24 *[insert address of Purchaser]* (hereinafter called “the Purchaser”), and
- (2) *[Insert name of Supplier]*, a corporation incorporated under the laws of *[insert: country of Supplier]* and having its principal place of business at *[insert: address of Supplier]* (hereinafter called “the Supplier”).

WHEREAS the Purchaser invited bids for certain Goods and ancillary services, viz., **Supply, Installation, Testing and Commissioning of Automatic Weather Station, Datalogger-Telemetry under NHP for CWPRS, Pune -24** and has accepted a Bid by the Supplier for the supply of those Goods and Services at the Project Site, namely **CWPRS, Khadakwasla, Pune-24**, in the sum of *[insert Contract Price in words and figures, expressed in Indian Rupees]* (hereinafter called “the Contract Price”).

[Purchase should insert a Table here giving complete details of Goods and Related Services, quantities ordered, their prices and the accepted delivery schedule.]

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
2. The following documents shall constitute the Contract between the Purchaser and the Supplier, and each shall be read and construed as an integral part of the Contract:
 - (a) This Contract Agreement
 - (b) The Purchaser’s Notification of Award
 - (c) Letter of Bid and original Price Schedules
 - (d) General Conditions of Contract
 - (e) Technical Requirements (including Schedule of Requirements and Technical Specifications)

3. This Contract shall prevail over all other Contract documents. In the event of any discrepancy or inconsistency within the Contract documents, then the documents shall prevail in the order listed above.
4. In consideration of the payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Purchaser to provide the Goods and Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.
5. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of *[insert the name of the Contract governing law country]* on the day, month and year indicated above.

For and on behalf of the Purchaser

Signed: *[insert signature]*

in the capacity of **Scientist 'C', CPC, CWPRS, Khadakwasla, Pune-24***[insert title or other appropriate designation]*

in the presence of *[insert identification of official witness]*

For and on behalf of the Supplier

Signed: *[insert signature of authorized representative(s) of the Supplier]*

in the capacity of *[insert title or other appropriate designation]*

in the presence of *[insert identification of official witness]*

Attachment: Contract Conditions

[Purchaser should attach the GCC]

3. Performance Security

(Bank Guarantee)

[The bank, as requested by the successful Bidder, shall fill in this form in accordance with the instructions indicated]

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: “Pay and Account Officer, CWPRS, Pune” *[insert name and Address of Purchaser]*

Date: *_ [Insert date of issue]*

PERFORMANCE GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that *_ [insert name of Supplier, which in the case of a joint venture shall be the name of the joint venture]* (hereinafter called "the Applicant") has entered into Contract No. *[insert reference number of the contract]* dated *[insert date]* with the Beneficiary, for the supply of *_ [insert name of contract and brief description of Goods and related Services]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Applicant, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of *[insert amount in figures] (_____)* *[insert amount in words]*,¹ such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.

¹ *The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, and denominated either in the currency(ies) of the Contract or a freely convertible currency acceptable to the Beneficiary.*

This guarantee shall expire, no later than the Day of, 2...², and any demand for payment under it must be received by us at this office indicated above on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

[signature(s)]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

² *Insert the date sixty days after the Completion Date of the Supply or Completion of Warranty in case Warranty is applicable. The Purchaser should note that in the event of an extension of this date for completion of the Contract or the Warrant obligations, the Purchaser would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Purchaser might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months]/[one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."*

PART 4 – Bank Policy - Corrupt and Fraudulent Practices

Section - 6 Bank Policy - Corrupt and Fraudulent Practices

Guidelines for Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011, revised July 2014.

“Fraud and Corruption:

1.16 It is the Bank’s policy to require that Borrowers (including beneficiaries of Bank loans), bidders, suppliers, contractors and their agents (whether declared or not), sub-contractors, sub-consultants, service providers or suppliers, and any personnel thereof, observe the highest standard of ethics during the procurement and execution of Bank-financed contracts.⁴ In pursuance of this policy, the Bank:

- (a) defines, for the purposes of this provision, the terms set forth below as follows:
 - (i) “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;⁵
 - (ii) “fraudulent practice” is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;⁶
 - (iii) “collusive practice” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;⁷
 - (iv) “coercive practice” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;⁸
 - (v) “obstructive practice” is:

⁴ In this context, any action to influence the procurement process or contract execution for undue advantage is improper.

⁵ For the purpose of this sub-paragraph, “*another party*” refers to a public official acting in relation to the procurement process or contract execution. In this context, “*public official*” includes World Bank staff and employees of other organizations taking or reviewing procurement decisions.

⁶ For the purpose of this sub-paragraph, “party” refers to a public official; the terms “benefit” and “obligation” relate to the procurement process or contract execution; and the “act or omission” is intended to influence the procurement process or contract execution.

⁷ For the purpose of this sub-paragraph, “parties” refers to participants in the procurement process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish bid prices at artificial, non-competitive levels, or are privy to each other’s bid prices or other conditions.

⁸ For the purpose of this sub-paragraph, “party” refers to a participant in the procurement process or contract execution.

- (aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or
 - (bb) acts intended to materially impede the exercise of the Bank's inspection and audit rights provided for under paragraph 1.16(e) below.
- (b) will reject a proposal for award if it determines that the bidder recommended for award, or any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;
 - (c) will declare misprocurement and cancel the portion of the loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;
 - (d) will sanction a firm or individual, at any time, in accordance with the prevailing Bank's sanctions procedures,⁹ including by publicly declaring such firm or individual ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract; and (ii) to be a nominated¹⁰;
 - (e) will require that a clause be included in bidding documents and in contracts financed by a Bank loan, requiring bidders, suppliers and contractors, and their sub-contractors, agents, personnel, consultants, service providers, or suppliers, to permit the Bank to inspect all accounts, records, and other documents relating to the submission of bids and contract performance, and to have them audited by auditors appointed by the Bank."

⁹ A firm or individual may be declared ineligible to be awarded a Bank financed contract upon: (i) completion of the Bank's sanctions proceedings as per its sanctions procedures, including, inter alia, cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceeding. See footnote 14 and paragraph 8 of Appendix 1 of these Guidelines.

¹⁰ A nominated sub-contractor, consultant, manufacturer or supplier, or service provider (different names are used depending on the particular bidding document) is one which has either been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.