



India Meteorological Department  
MausamBhawan, Lodi Road  
New Delhi-110003

**Notice Inviting Tender (NIT)**

Tender Enquiry No. **DGM-HQ-32011(61)/1/2022-CPU-17500**

Dated: 05.08.2022

1. Director General of Meteorology (DGM), India Meteorological Department (IMD), Ministry of Earth Sciences (MoES), Government of India, on behalf of president of India invites ONLINE e-TENDER in two bid systems from qualified bidders i.e. (i)Techno-commercial bid & (ii) Price bid from eligible and qualified Indian firms for procurement of services.Manual bids shall not be accepted.
2. Name of Goods/Article/Services: **Agro Automatic Weather Station with data receiving and Processing System .**
3. Quantity &Specification : As per RFP section under tender enquiry document.
4. Tender schedule is as follows:

1.	PRE BID Conference (A) Date & Time	22/08/2022 / 1100 Hrs Telephone No. 02025865047
2.	Closing date and time for submission of tender	23/09/2022/ 1500 Hrs
3.	Tender Opening date & time (Technical Bid)	26/09/2022/ 1200 Hrs
4.	Place of Tender opening	Central Purchase Unit O/o DGM, IMD Lodi Road ,New Delhi-110003

5. **Earnest Money Deposit (EMD):** Rs.72,76,710/- (Rupees Seventy Two Lakh Seventy Six Thousand Seven Hundred and Ten ) only. EMD shall be accepted from the participating firm only in the form of Bank Guarantee (BG). Banker's Cheque/Demand Draft are NOT acceptable.
6. Signed and scanned copy of EMD document/MSME-NSIC Certificate must be uploaded on CPP Portal at <https://eprocure.gov.in/eprocure/app> . Original EMD document in the form of BG/FDR and Hard Copy of MSME/NSIC Certificate for EMD-Exemption must be submitted in Central Purchase Unit (CPU) room No.517 on or before closing of bids submission date. EMD shall be valid for 240 days from the date of opening of tender.

7. (a) Micro and small Enterprises registered as OEM for stores and services specified in this tender with any government bodies specified by Ministry of Micro, Small & Medium Enterprises are exempted for submitting the earnest money deposit (EMD).  
(b) Firms other than SSI registered as OEM for stores and services NSIC, are also exempted for submitting EMD.  
(c) The exemption and relaxation in EMD are subject to validity of their registration on the date of opening of tender.
8. All prospective bidders are intimated that there will be “No” personal Pre-bid meeting. The prospective bidders can send their queries preferably 5 days in advance before scheduled pre-bid meeting, on email: [awspene@imd.gov.in](mailto:awspene@imd.gov.in) and [andsi.purchase@imd.gov.in](mailto:andsi.purchase@imd.gov.in). in addition to [aasd@imd.gov.in](mailto:aasd@imd.gov.in) & [cpu.imd@imd.gov.in](mailto:cpu.imd@imd.gov.in).
9. The bidder shall download the Tender Enquiry Document from <https://eprocure.gov.in/eprocure/app> and <https://internal.imd.gov.in/pages/tenders.php> bidder shall upload their tender ONLINE through <https://eprocure.gov.in/eprocure/app> along with scanned copies of EMD documents as mentioned in Para 5 above. Manual bids are NOT accepted.
10. EMD should be issued in the favour of “O/o Director General of Meteorology, IMD, New Delhi” and payable at New Delhi.
11. Purchaser: The President of India  
Through Director General of Meteorology  
India Meteorological Department  
Lodi Road, New Delhi-110003
12. Consignee: Head (CR&S Pune)  
India Meteorological Department  
Shivajinagar Pune-411005
13. Testing & Acceptance Authority : Head (CR&S Pune)  
India Meteorological Department  
Shivajinagar Pune-411005

\*\*\*\*

Central Purchase Unit (CPU)  
O/o Director General of Meteorology  
Lodi Road, New Delhi-110003.  
Email : [cpu.imd@imd.gov.in](mailto:cpu.imd@imd.gov.in)

## निविदा आमंत्रित करने की सूचना (एनआईटी)

ई-निविदा जाँच सं. **DGM-HQ-32011(61)/1/2022-CPU-17500** दिनांक : 05.08.2022

1. मौसम विज्ञान के महानिदेशक (मौविमनि) भारत मौसम विज्ञान विभाग (भा.मौ.वि.वि.) पृथ्वी विज्ञान मंत्रालय, भारत सरकार, भारत के राष्ट्रपति की ओर से नीचे लिखे सामान / वस्तुएँ / सेवाओं की आपूर्ति, संस्थापन और आरंभ के लिए पात्र और अर्हक भारतीय निविदाकारों से दो बिड प्रणाली अर्थात (एक) तकनीकी बिड और (दो) दर बिड में ऑनलाइन निविदा आमंत्रित करते हैं।
2. सामान/ वस्तुएँ/ सेवाओं का नाम: **Agro Automatic Weather Station with data receiving and Processing System**
3. विनिर्देशन और मात्रा: आरएफपी के अनुसार,
4. निविदा अनुसूची इस प्रकार है:

1.	प्री बिड कांफ्रेंस (क) दिनांक व समय	22/08/2022 / 1100 Hrs <b>Telephone No. 02025865047</b>
2.	निविदा जमा करने की अंतिम तिथि व समय	23/09/2022/ 1500 Hrs
3.	निविदा खोलने की तिथि व समय (तकनीकी बिड)	26/09/2022/ 1200 Hrs
4.	निविदा खोलने का स्थान	केंद्रीय क्रय एकक, कार्यालय महानिदेशक, भारत मौसम विज्ञान विभाग लोदी रोड, नई दिल्ली-110003

5. धरोहर राशि (ई एम डी): रु. 72,76,710/- (बहत्तर लाख छिहत्तर हजार सात सौ दस रुपये)। केवल, बैंक गारंटी अथवा मियादी जमा रसीद (एफ०डी०आर०) द्वारा ही स्वीकार की जायेगी।
6. ई०एम०डी०, निविदा खुलने की तिथि से २४० दिन के लिये वैध होनी चाहिये। हस्ताक्षरित ई०एम०डी० तथा अन्य दस्तावेज की स्कैन की गई प्रतिवेबसाइट <https://eprocure.gov.in/eprocure/app> पर आनलाइन अपलोड करे। मूल ईएमडी (B.G. / FDR के रूप) में और छूट के लिए किसी भी अन्य प्रमाण पत्र को केंद्रीय क्रय एकक (सीपीयू) कमरा नंबर 517 में बोलियों के जमा करने की अंतिम तिथि व समय से पहले जमा करना होगा।
7. (क) लघु उद्योग, कुटीर और छोटे पैमाने पर उद्यम जो किसी भी सरकारी निकायों के साथ इस निविदा में निर्दिष्ट समान और सेवाओं के लिए पंजीकृत है, उनको निविदा शुल्क और धरोहर राशि (EMD) प्रस्तुत करने के लिए छूट दी गई है।  
(ख) एन०एस०आई०सी० के साथ इस निविदा में निर्दिष्ट समान और सेवाओं के लिए पंजीकृत अन्य कंपनियों को भी ईएमडी जमा करने के लिए छूट दी गई है।  
(ग) ई०एम०डी० में छूट निविदा खोलने की तारीख पर उनके पंजीकरण की वैधता के अधीन हैं।

8. सभीसंभावितबोलीदाताओंकोसूचितकियाजाताहैकिव्यक्तिगतबोली-पूर्वबैठक"नहीं" होगी।संभावितबोलीदाताओंसेअनुरोधहैकिवेअपनेप्रश्नोंकोअधिमानत:5 दिनपहलेनिर्धारितप्री-बिडमीटिंगसेपहलेईमेल:[awspune@imd.gov.in](mailto:awspune@imd.gov.in), [si.purchase@imd.gov.in](mailto:si.purchase@imd.gov.in)के साथ साथ [aasd@imd.gov.in](mailto:aasd@imd.gov.in)व [cpu.imd@imd.gov.in](mailto:cpu.imd@imd.gov.in) परभी भेज सकते हैं।

9. निविदाकर्ता

<https://eprocure.gov.in/eprocure/app>और<https://internal.imd.gov.in/pages/tenders.php>वेबसाइटसे निविदाजांचकागजातडाउनलोडकरसकतेहैंऔरडाउनलोडकिएगएकागजात के अनुसार अपनी निविदा तथा हस्ताक्षरित ई०एम०डी० दस्तावेज की स्कैन की गई प्रति वेबसाइट <https://eprocure.gov.in/eprocure/app>पर आनलाइन अपलोड करे।

10. ई०एम०डी० दस्तावेज "O/o Director General of Meteorology, IMD, New Delhi" के पक्ष और नई दिल्ली में देय, जारी किया जा सकता है।

11. क्रयकर्ता:

भारत के महामहिम राष्ट्रपति  
भा.मौ.वि.वि.के माध्यम से  
भारत मौसम विज्ञान विभाग,  
लोदी रोड, नई दिल्ली-110003

12. प्रेषित: प्रमुख (CR&S Pune),

भारत मौसम विज्ञान विभाग  
शिवाजी नगर पुणे-411005

13. जाँच प्राधिकारी:

प्रमुख (CR&S Pune),  
भारत मौसम विज्ञान विभाग  
शिवाजी नगर पुणे-411005

\*\*\*\*\*

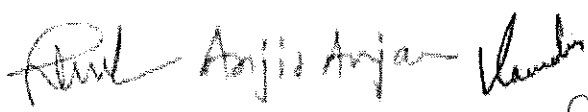


केंद्रीय क्रय एकक (CPU)  
मौसम विज्ञान के महानिदेशक का कार्यालय,  
लोदी रोड, नई दिल्ली -110003

Email :[cpu.imd@imd.gov.in](mailto:cpu.imd@imd.gov.in)

**TENDER DOCUMENT****For****Procurement of 330 Agro Automatic Weather Stations  
with Data Receiving and Processing System****Government of India  
Ministry of Earth Sciences,  
India Meteorological Department,  
Mausam Bhawan, Lodhi Road, New Delhi-  
110003**

**TABLE OF CONTENTS OF TENDER DOCUMENT**

<b>CHAPTER</b>	<b>Description</b>	<b>Page No.</b>
<b>Chapter 1</b>	<b>Instructions to Bidders</b>	<b>6</b>
<b>Chapter 2</b>	<b>Conditions of Contract</b>	<b>13</b>
<b>Chapter 3</b>	<b>Schedule of Requirements</b>	<b>17</b>
<b>Chapter 4</b>	<b>Specifications and allied Technical Details</b>	<b>25</b>
<b>Chapter 5</b>	<b>Price Schedule (to be utilized by the bidders for quoting their prices)</b>	<b>84</b>
<b>Chapter 6</b>	<b>Contract Forms</b>	<b>86</b>
<b>Chapter 7</b>	<b>Other Standard Forms, if any, to be utilised by the purchaser and the bidders</b>	<b>105</b>

**List of abbreviations in RFP**

S.No.	Abbreviations	Explanation
1	AWS	Automatic Weather Stations
2	AAWS	Agro Automatic Weather Stations
3	BG	Bank Guarantee
4	CDEC	Custom Duty Exemption Certificate
5	CDMC	Comprehensive Annual Maintenance Contract
6	CGST	Central Goods and Service Tax
7	CGWA	Central Ground Water Authority
8	CPP	Central Public Procurement
9	CPU	Central Purchase Unit
10	DAMU	District Agro Met Unit
11	DAS	Data Acquisition System
12	DCS	Digital Signature Certificate
13	DDO	Drawing and Disbursing Office
14	DGM	Director General of Meteorology
15	DTAA	Double Taxation Avoidance Agreement
16	EMD	Earnest Money Deposit
17	FAT	Factory Acceptance Test
18	FOB	Freight on Board

*Atul Anjil Anjan Kumar*  
*Wahab*

19	FOR	Freight on Road
20	FRP	Fiber Reinforced Plastic
21	GCC	General Conditions of Contract
22	GIT	General Instructions to Tenderers (Bidders)
23	GPRS	General Packet Radio Service
24	IFSC	Indian Financial System Code
25	IGST	Integrated Goods and Service Tax
26	IMD	India Meteorological Department
27	LC	Letter of Credit
28	LD	Liquidated Damages clause
29	MC	Meteorological Centre
30	MICR	Magnetic Ink Character Recognition
31	MoMSME	Ministry of Micro, Small & Medium Enterprises
32	NIC	National Informatics Centre
33	NIST	National Institute for Standards and Technology
34	NIT	Notice Inviting Tender
35	NOC	No Objection Certificate
36	NSIC	National Small Industries Corporation
37	OEM	Original Equipment Manufacturer
38	OIDB	Oil Industry Development Board

*Rahul Anjil Anjan Kumar*  
*Dehgal*



39	OSC	Original Software Company
40	PAN	Permanent Account Number
41	PSU	Public Sector Unit
42	RFP	Request for Proposal
43	RMC	Regional Meteorological Centre
44	RTC	Real Time Clock
45	SAT	Site Acceptance Test
46	SGST	State Goods and Service Tax
47	SMF	Sealed Maintenance Free
48	TBRG	Tipping Bucket Rain Gauge
49	TDS	Tax Deducted at Source
50	TE	Tender Enquiry
51	TTL	Transistor Transistor logic
52	CDRPS	Central Data Receiving and Processing System
52	AMFU	Agromet Field Unit
53	DR	Disaster Recovery

*Atul Anjil Anjan Kumar*  
*Behal*

## Chapter 1

### INSTRUCTIONS TO BIDDERS

#### 1. Introduction:

The India Meteorological Department (IMD) has issued this Tender Enquiry (TE) documents for purchase of goods/stores/articles and related services as mentioned in "Request for Proposal(RFP)", which also indicates, *inter alia*, the required stores, delivery schedule, terms and place of delivery etc. This section provides the relevant information as well as instructions to assist the prospective Tenderers in preparation and submission of tenders.

**Bidders shall have to agree/accept all the terms and conditions of tender including payment terms etc. Acceptance shall be unconditional and bidders shall have no claim and right in future on their terms, if any.**




#### 2. Language of Tender:

The tender submitted by the tenderer and all subsequent correspondence and documents relating to the tender exchanged between the tenderer and the purchaser, shall be written in English language.

#### 3. Eligible Goods and Services:

Tenders are invited from Indian bidders as per the policy of Government of India to encourage Make in India and promote manufacturing and production of goods and services in India circulated vide Order No. P-45021/2/2017- B.E.-II, Ministry of Commerce and Industry, Department of Industrial Policy and Promotion dated. 16.09.2020 and instructions issued from time to time. Eligible goods and services will be as follows:

- a. The „Class-I local supplier“ and „Class-II local supplier“ only shall be eligible to bid. The “local content” requirement to categorize a supplier as „Class-I local supplier“ is minimum 50% and for „Class-II supplier“ is 20%. Purchase preference shall be given to „Class-I local supplier“.
- b. All goods and related services to be supplied under the contract shall have their origin in India or any other country with which India has not banned trade relations. The term „origin“ used in this clause means the place where the goods are mined, grown, produced, or manufactured or from where the related services are arranged and supplied.
- c. Any bidder from a country which shares a land border with India will be

eligible to bid in this tender only if the bidder is registered with the Competent Authority as per Department of Expenditure, Ministry of Finance Competent Authority as per Department of Expenditure, Ministry of Finance Order No. F. No.6/18/2019-PPD dated 23-07-2020, and other Govt. of India orders issued from time to time in the matter.

**d. Compliance of Rule 144(xi) of GFR-2017: Bidder has to submit a compliance certificate that they comply with the Govt. Order E. No. 6/18/2019-PPD dated 23<sup>rd</sup> July, 2020 of Min. of Finance, DoE, Public Procurement Division, failing which their bid shall not be accepted and liable to be rejected.**

**4. Tendering Expense**

The tenderer shall bear all the costs and expenditure incurred and/or to be incurred by them in preparation, and uploading their tender including attending the pre-bid conference and or arranging demonstration of Product/Services or Field trials that may be deemed necessary by the Purchaser.

**5. PRE-BIDCONFERENCE:**

Pre-bid conference shall be held as per NIT schedule. All prospective bidders are intimated that there will be "No" personal Pre-bid meeting. The prospective bidders are requested to send their queries preferably 5 days in advance before scheduled pre-bid meeting, on email: [cpu.imd@imd.gov.in](mailto:cpu.imd@imd.gov.in) and [aasd@imd.gov.in](mailto:aasd@imd.gov.in). After pre-bid conference, tender conditions will be frozen. **No change will be permissible after the opening of Bids.** Clarification needed, if any, may be sent before commencement of pre-bid meeting. No reply in this regard shall be sent to individual bidders. Approved Pre-bidminutes shall be later uploaded on e-Procurement portal at <https://eprocure.gov.in/eprocure/app>.

**6. Regular visit of website:**

Prospective bidders are advised to see IMD website at [https://internal.imd.gov.in/pages/tenders\\_mausam.php](https://internal.imd.gov.in/pages/tenders_mausam.php) & CPP portal at <https://eprocure.gov.in/eprocure/app> on regular basis for any change in NIT schedule, amendment / corrigendum in Tender Document (T.E.) including technical requirement and pre-bid minutes etc.

**7. Amendments to TE documents:**

At any time, prior to the deadline for submission of tenders, the purchaser may, for any reason deemed fit by it, modify the TE documents by issuing suitable amendment(s) to it. The amendment will be uploaded on <https://eprocure.gov.in/cppp/>. In order to provide reasonable time to the prospective tenderers to take necessary action in preparing their tenders as per

*Handwritten signatures and initials:*  
 Anil Anjan Kumar  
 Anil Anjan Kumar  
 Anil Anjan Kumar  
 Anil Anjan Kumar  
 Anil Anjan Kumar

the amendment, the purchaser may, at its discretion extend the deadline for the submission of tenders and other allied time frames, which are linked with that deadline. Prospective bidders are advised to visit/see <https://eprocure.gov.in/cppp/as> well as IMD website [https://internal.imd.gov.in/pages/tenders\\_mausam.php](https://internal.imd.gov.in/pages/tenders_mausam.php) on regular basis for any change in NIT schedule, amendment / corrigendum in Tender Document including technical requirement.

#### 8. Documents Comprising the Tender:

The tender is to be submitted in two bid system.

Part-1 should contain Technical Bid and duly signed blank price bid (without indicating the cost) and scanned copy of EMD.

Part-2 should contain only the price bid indicating the cost and applicable GST/Taxes etc. as per the price schedule (Chapter 5 of the tender document)

The bid should be submitted electronically through CPP Portal <https://eprocure.gov.in/cppp/>. The Part-1(technical bid) and Part-2(Price bid) should be uploaded separately indicating the Tender reference/details. Please note that to participate in the tender, Digital Signature Certificate (DSC) has to be obtained by the bidder. The bidders are advised to obtain DSC (Digital signature Certificate) from the authorized agent of NIC (the list available in the NIC portal) and to register with NIC. In case the Price/Cost is revealed in the Part 1(Technical bid) the tender will be treated as invalid or rejected.

The responsibility to ensure the timely submission of bid lies with the bidder. Bids submitted through FAX or e-mail will not be considered. Bidders shall also attach scanned copies of all the requisite documents i.e. Earnest Money and other certificates/documents specified in the tender documents. The bids are to be submitted (electronically) as per the bidding type indicated in the beginning of the tender document. No manual tender is acceptable.

##### 8.1 Technical Bid (Unpriced Tender)

The Two Bid System, i.e. "Technical Bid" and "Price Bid" prepared by the bidder shall comprise the followings:

The following documents are to be furnished by the tenderer along with their **Technical Bid**. Bidder shall upload following documents on CPP PORTAL <https://eprocure.gov.in/eprocure/app>:

- (i) Registration certificate of bidding firm with Govt. of India. Credential/document.
- (ii) Checklist section (as per Annexure-I) properly filled and signed.
- (iii) Tender terms & Conditions Acceptance Form (as per Annexure- II)

*Anil Anji Anja*  
*Udizulo*

- (iv) Authorization letter from the OEM to submit /deposit the tender document. Above documents must be enclosed with technical bids otherwise bids may be ignored and not to be considered for technical evaluation.
- (v) Along with Technical bid, List of deliverables (un-priced/without price) shall be submitted along with detailed make, model & country of origin etc. as per Annexure-VI. This should be exactly same as attached in price bid as per Chapter 5 Price Schedule (to be utilized by the bidders for quoting their prices in INR).
- (vi) Pre-Integrity Pact as per format at Annexure-V duly signed on all the pages by the authorized signatory.

**Note:** The above documents (signed and scanned) shall be attached at the beginning of technical bid.

### 8.1 Price Bid:

- (i) All pages of the price bid should be page numbered, indexed and signed with company/firm seal by authorized signatory.
- (ii) Price Bid shall be submitted as per price schedule format in INR only defined under Chapter 5 Price Schedule (to be utilized by the bidders for quoting their prices).
- (iii) Costing of each and every item, sub items offered in bidder's technical bid, shall be done with all breakup prices.
- (iv) The Tenderer shall indicate the Price Schedule specifying all components (main units and sub units etc. of each item) prices shown therein including the unit prices and total tender prices of the goods (H/w & S/w), services, packing, inland transportation/insurance to the sites, GST etc. against their requirement.
- (v) Wherever, the Purchaser's invitation to tender calls for installation and commissioning or supervision of installation and commissioning of the instrument/equipment by the tenderer, the tenderer must clearly and separately quote the prices for the supply of the stores and the charges & the terms for installation and commissioning or supervision of installation and commissioning as the case may be. The charges towards installation and commissioning should not be included in the price of the stores.
- (vi) The Supplier shall be paying all the taxes (IGST/SGST/CGST/Income-tax/or any other taxes/Octroi) levied by the state/central government, as per the rates prevailing at the time of undertaking the job in accordance with the Income-tax in India.
- (vii) CAMC shall be for the maintenance of stores (equipment and software only), therefore prospective bidders are advised to quote CAMC charges accordingly and specifically. It should not be quoted in terms of percentage of project as consumable, transportation, warranty; installations, training etc. are not covered under CAMC. **Price bids shall not be accepted if CAMC charges are quoted in percentage or inclusive in the price of stores.**

*Arjun Anjan Kumar*  
*Arjun Anjan Kumar*

- (viii) In case any charges not mentioned in the price bid, it will be treated as all the charges are free of cost for that item.
- (ix) The bidder shall quote prices on F.O.R destination (sites mentioned by the consignee) basis and Payment to supplier shall be paid into Indian rupees (INR) only.
- (x) The bidder supplying goods shall quote in Indian Rupees only. Prices quoted by the tenderer shall remain firm and fixed in the Indian currency of the contract.
- (xi) Statutory levies, taxes and duties etc., if any, chargeable on the goods are on actual basis as applicable.
- (xii) If there is a discrepancy between the amount expressed in words and figures, the amount in words shall prevail.

**Note:** Price bid shall prima-facie be rejected in case of any deviation from the technical bid of the bidder and found that any fact concealed or hidid in price bid/technical bid.

#### 9. Signing and uploading of Tender:

Tenderer shall upload their properly signed and stamped tender on the company letter head ONLINE through CPP Portal (URL:<https://eprocure.gov.in/eprocure/app>), as manual bids shall not be accepted. The tender shall not contain any eraser or overwriting, except as necessary to correct any error made by the bidder and, if there is any such correction; the same shall be signed by the authorized person(s) signing the tender document.

#### 10. Alteration and Withdrawal of Tender:

The bidder, after uploading online bid through CPP Portal is permitted to alter / modify its bid within the deadline for submission of bids. No tender should be withdrawn after the deadline for submission of tender and before expiry of the tender validity period. If a tenderer withdraws the tender during this period, it will result in forfeiture of the earnest money furnished by the bidder and action will be taken as deemed fit as per rules.

#### 11. Opening of Tenders:

The purchaser will open the tender at the specified date and time and at the specified place as indicated in the NIT. In case the specified date of tender opening falls on / is subsequently declared a holiday or closed day for the purchaser, the tenders will be opened at the appointed time and place on the next working day. Two Bid system will be as follows. The **Technical Bids** are to be opened in the first instance, at the prescribed time and date. These Technical bids shall be scrutinized and evaluated by the competent committee/ authority with reference to parameters prescribed in the TE document. Thereafter, in the second stage, the Price Bids of technically qualified tenderers only shall be opened online for further scrutiny and evaluation on a date notified after evaluation of the technical bids.

*Handwritten signatures and stamps:*  
 Anjali Anjan Kumar  
 [Signature]  
 [Signature]

## 12. Scrutiny and Evaluation of Tenders:

### 12.1 Unresponsive bids:

The tenders will be scrutinized to determine whether they are complete and meet the essential and important requirements, conditions etc. as prescribed in the TE document. The tenders will be treated as non-responsive and will be summarily ignored if followings are not provided along with technical bids:

- (i) Tender is unsigned or is incomplete, is not uploaded on e-procurement portal due to any reason within stipulated period.
- (ii) Signed and stamped Checklist (**Annexure-I**) is not properly filled and fully furnished compliance statement is not enclosed.
- (iii) Tender Acceptance Form (**Annexure-II**) not duly signed and stamped. (i.e. **all the terms & conditions of tender document are acceptable**). Original Letter shall be enclosed in technical bid.
- (iv) Tender validity is shorter than the required period.
- (v) Required EMD document has not been provided unless exempted.
- (vi) Bidder has not agreed to give the required performance security.
- (vii) Copy of agreement of bidding firm with the OEM / principal mentioning the precise relationship between them and nature of services. Copy of this agreement must be attached with the tender.
- (viii) Pre-Integrity Pact as per format at **Annexure-V** duly signed on all the pages by the authorized signatory.

### 12.2 Technical Evaluation:

Tenders shall be scrutinized and evaluated by the committee constituted by competent authority with reference to parameters prescribed in the TE document.

#### **Minor Informality/Irregularity/Non-Conformity:**

If during the preliminary examination, the purchaser finds any minor informality and/or irregularity and/or non-conformity in a tender, **the purchaser may waive the same provided it does not constitute any material deviation and financial impact and, also, does not prejudice or affect the ranking order of the Bidders.** Wherever necessary, the purchaser will convey its observation on such "minor issues" to the Bidder asking the Bidder to respond by a specified date. If the Bidder does not reply by the specified date or gives evasive reply without clarifying the point at issue in clear terms, that tender will be rejected.

The technical presentation in the presence of committee may be held in IMD. The committee will seek clarifications on design, performance and other technical points during presentation.

### 12.3 Financial evaluation:

*Handwritten signatures and initials:*  
 Anil Anjan Khush  
 Anil Khush  
 Anil Khush

- a) After Technical Evaluation, the price Bids of only the technically qualified bidders shall be opened for further scrutiny and evaluation on a date notified.
- b) IMD shall evaluate the technically qualified financial bids for deciding the lowest bidder (L-1) on the basis of landing costs of the store including all applicable taxes/ levies /duties etc.
- c) The cost of Warranty/ Extended warranty and CAMC Charges etc. will be added to evaluate financial bid for deciding the lowest bidder L-1. Charges towards Insurance, Freight and transportation of goods up to delivery at sites etc. applicable from time to time for taking purchase decision shall also be added. These should be clearly indicated by the bidder.
- d) IF ANY CHARGES ARE NOT INDICATED SPECIFICALLY AND SEPARATELY IN THE BID, SAME WILL BE TREATED AS INCLUSIVE.

### 13. Packing and Marking:

The packing for the goods to be provided by the supplier should be strong and durable enough to withstand, without limitation, the entire journey during transit, rough handling, open storage etc. without any damage, deterioration etc. On opening of packing, if any item is found damaged / broken, then supplier is liable to replace it free of cost at the site of installation.



*Handwritten signatures and text:*  
Rahul Anjia Anjan Kumar  
Vedizud



## Chapter 2

### Conditions of Contract

1. **Bidders shall have to agree/accept all the terms and conditions of tenders including payment terms etc. Acceptance shall be unconditional and bidders shall have no claim and right in future on their terms, if any.**
  
2. Whenever there is any conflict between the provisions in the **regards to specific Para under this section and that in the "Chapter 4 - Specifications and allied Technical Details"**, the provision contained in Chapter 4 of the Tender document shall prevail and have an over-riding effect. Any Special instructions and conditions (like qualification criteria, delivery schedule, mode of delivery & sites of delivery etc.) mentioned in "**Specifications and allied Technical Details**" section will also apply for this purchase.
  
3. **Tender Validity:**  
  
The tenders shall remain valid for acceptance for a period of 180 days (one hundred eighty days) after the date of tender opening, prescribed in the TE document.
  
4. **Purchaser's Right to accept any tender and to reject any or all tenders:**  
  
The purchaser reserves the right to accept in part or in full any tender or reject any tender without assigning any reason or to cancel the tendering process and reject all tenders at any time prior to award of contract, without incurring any liability, whatsoever to the affected Bidder or Bidders.
  
5. **Tender Fee:** No tender fee is charged on the downloaded and e-tenders.
  
6. **Price preference:**
  - 6.1 Purchase preference shall be given to „**Class-I local supplier**“.
  - 6.2 Price preference shall be given to Micro and Small Industries registered for stores and services specified in this tender document with National Small Industries Corporation or any other government agencies as per the latest guidelines/orders from Government of India. Purchase preference and quantity etc. shall be decided as per the Government of India orders. The Bidders shall have to attach valid registration certificate as OEM. Micro and small Enterprises are exempted for submitting fees/cost towards tender document and submission of earnest money deposit (EMD) also known as security deposit. However Micro and small Enterprises are not exempted for

Performance security. Micro and small Enterprises shall have to furnish performance security if purchase order is placed to them. There is no relaxation in this regard.

**7. Eligibility & Qualification criterion for Bidders:**

- a) The „Class-I local supplier“ and „Class-II local supplier“ only shall be eligible to bid. The “local content” requirement to categorize a supplier as „Class-I local supplier“ is minimum 50% and for „Class-II local supplier“ is 20%. Purchase preference shall be given to „Class-I local supplier“.
- b) The „Class-I local supplier“/ „Class-II local supplier“ is required to indicate percentage of local content and provide self-certification that the item offered meets the local content requirement for „Class-I local supplier“/ „Class-II local supplier“, as the case may be. They have to give details of the location(s) at which the local value addition is made.
- c) The „Class-I local supplier“/ „Class-II local supplier“ is required to provide a certificate from the statutory auditor or the cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) certifying the percentage of local content.
- d) All goods and related services to be supplied under the contract shall have their origin in India or any other country with which India has not banned trade relations. The term „origin“ used in this clause means the place where the goods are mined, grown, produced, or manufactured or from where the related services are arranged and supplied.
- e) Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority as per Department of Expenditure, Ministry of Finance Order No. F. No.6/18/2019-PPD dated 23-07-2020, and other Govt. of India order issued from time to time on the matter.
- f) The bidder should have full back-to-back maintenance support agreement for hardware & software from Original Equipment Manufacturer (OEM). The bidder shall also submit the backup support from OEM to provide after sale service support for entire period of system operation during warranty and CAMC along with Manufacturer’s Authorization Form in the prescribed format(Annexure-IV).

**8. Earnest Money Deposit (EMD):**

The bidder shall furnish earnest money along with its tender, for an amount as shown in the tender notice. The earnest money is required to protect the purchaser against the risk of the bidder’s unwarranted conduct.

The bidders who are registered on Tender submission date with National Small Industries Corporation, New Delhi, shall be eligible for exemption from EMD. Micro and small Enterprises specified by Ministry of Micro, Small & Medium Enterprises (MoMSME) are exempted from Earnest Money Deposit (EMD), who produce goods or provide their own services

*Arjun Anjan Kumar*  
*Arjun Anjan Kumar*  
*Arjun Anjan Kumar*

and not applicable for trading purpose. No entrepreneur or memorandum of application form is acceptable.

The EMD shall be furnished in form of Bank Guarantee (BG) (Annexure- III) from any Nationalized Commercial Bank doing government business. BG may be issued in the favour of "DDO, O/o DGM, IMD, New Delhi". Bank Guarantee issued from the foreign banks must be authenticated by STATE BANK OF INDIA or any other Nationalized Bank of India. Demand draft for EMD in INR submitted by foreign bidders shall not be accepted.

The clause "release of BG requires clearance certificate from Purchaser i.e. DGM, IMD" must be mentioned in issued BG by Bank. The earnest money shall be valid for period of sixty (60) days beyond the validity period of the tender.

**Refund of EMD:** Unsuccessful bidders' earnest money will be returned to them without any interest, after expiry of the tender validity period. For successful bidder the earnest money will be returned without any interest, after receipt of their performance security.

**Forfeiture of EMD:** Earnest money of a Bidder will be forfeited, if the bidder withdraws or amends its tender or impairs or derogates from the tender in any respect within the period of validity of its tender or if it comes to notice that the information/documents furnished in its tender is incorrect, false, misleading or forged without prejudice to other rights of the purchaser. The successful bidder's earnest money will be forfeited without prejudice to other rights of Purchaser if supplier fails to furnish the required performance security within the specified period. Firm shall have to extend the validity of EMD accordingly if extension of tender validity is agreed on the request of purchaser in exceptional cases.

**EMD is fixed at 3 % of the total cost of the project as per Indent of 330 Agro AWS. However, the EMD may also change as per new rules/Guidelines by Govt. of India during floating the tender.**

#### 9. Performance Security:

- 9.1 Successful bidder shall submit performance security within thirty (30) days from date of dispatch of supply order/award of contract by the purchaser or within twenty-one (21) days from the receipt of supply order by the supplier whichever is earlier.
- 9.2 The purchaser may consider annulment/cancellation of supply order/award of contract if performance security is not received in stipulated time.
- 9.3 There is no relaxation/exemption in submitting of performance security. The supplier, shall furnish performance security to the purchaser for an amount equal to **three percent (3%) of the total value of the contract**, valid up to sixty (60) days beyond the warranty period

*Handwritten signatures and text:*  
 Anil Anjan Kumar  
 Delhish

(As per Office memorandum No F.9/4/2020 PPD Dated 12.11.2020 and revised order Dated 30.12.2021 of Ministry of finance Department of Expenditure till 31.03.2023).

**The performance security may also change as per new rules/ Guidelines/GFR 2017 by Govt. of India during issue of supply order to the successful bidder.**

**9.4 Bank Guarantee during the two years warranty period**

Payment of 20 % will be retained for Warranty period of two years after commissioning of the project. Payment retained for the warranty period shall be released according to bidder's requirement against the submission of unconditional irrevocable Bank Guarantee during the warranty period from any Nationalized Commercial Bank doing government business. The BG may be issued in the favour of "DDO, O/o DGM, IMD, New Delhi". Bank Guarantee issued from the foreign banks must be authenticated by STATE BANK OF INDIA or any other Nationalized Bank of India. Demand draft for the BG in INR submitted by foreign bidders shall not be accepted.

The format of bank Guarantee during warranty period is enclosed as Annexure-XI.

- 9.5 The CAMC service provider shall furnish performance security to the purchaser for an amount equal to Five percent (5%) of the total value of the CAMC Value of a year, valid up to sixty (60) days after the date of completion of all contractual obligations by the supplier/service provider.**
- 9.6 Performance Security has to be submitted irrespective of the bidder registration NSIC etc. Performance security is not relaxed to any supplier/service provider. Submission of Performance Security is must for all suppliers/service providers.**
- 9.7 Performance Security shall be in the form of Bank Guarantee issued by a National Commercial Bank, doing government business, in the prescribed form in favour of the purchaser. In the event of any amendment issued to the contract, the supplier shall, within twenty-one (21) days of issue of the amendment, furnish the corresponding amendment to the Performance Security (as necessary), rendering the same valid in all respects in terms of the contract, as amended in the form of Bank Guarantee.**
- 9.8 The purchaser will release the Performance Security without any interest to the supplier/ service provider on completion of the supplier's all contractual obligations including the warranty obligations & after receipt of performance security for CAMC (if applicable). The supplier shall submit pre-receipt for obtaining back their security.**

*Atul Anjil Anjan Kumar*  
*Deligal*

### Chapter 3

#### Schedule of Requirements

India Meteorological Department (IMD) has undertaken installation of Agro-Automatic Weather Stations (AWS) to provide accurate weather forecast to the people, especially the farmers. The installation was done at District Agromet Units (DAMUs) located in the Krishi Vigyan Kendras (KVKs) under the Indian Council of Agricultural Research (ICAR) network. Agro-AWS is being installed at 200 DAMUs to augment block-level Agromet Advisory Services (AAS) under Gramin Krishi Mausam Sewa (GKMS) scheme.

Weather-based operational AAS viz. GKMS scheme, rendered by IMD jointly with Indian Council of Agricultural Research (ICAR) and State Agricultural Universities, is a step towards weather-based crop and livestock management strategies and operations for the benefit of the farming community in the country. Under the scheme, medium-range weather forecast at district and block level is generated and based on the forecast, Agromet Advisories are prepared and communicated by the Agromet Field Units (AMFUs) co-located with State Agricultural Universities, and DAMUs at KVKs to the farmers every Tuesday and Friday. IMD also monitors rainfall situations & weather aberrations and issues alerts & warnings to the farmers from time to time under the GKMS scheme. SMS-based alerts and warnings for extreme weather events along with suitable remedial measures are issued to take timely operations by the farmers. Such alerts and warnings are also shared with the State Department of Agriculture for the effective management of calamity.

Agromet Advisories are communicated to the farmers through multichannel dissemination systems like print and electronic media, Door Darshan, radio, internet etc. including SMS using mobile phones through Kisan Portal of the Ministry of Agriculture and Farmers' Welfare and also through private companies under Public-Private Partnership (PPP) model. At present, 43.37 million farmers in the country receive the Agromet Advisories through SMS directly. KVK of ICAR has also given link to the respective district-level advisory in their web portal.

To further enhance Agromet services, IMD proposes to install 330 GPRS based Agro AWS at additional 200 District Agro Met Units (DAMUs) & 130 AMFUs spread across the country. For utilizing the data from entire AWS network, a Central Data Receiving and Processing System shall also be implemented at IMD Pune under the present scope of the project.

*Arjun Anjia Anjan Kumar*  
*Uchiraj*

### 1. Terms of Delivery:

Goods shall be delivered by the supplier in accordance with the terms of delivery specified in the contract. Suppliers should not deliver the goods without any valid delivery period. Purchaser shall not be held responsible for anything (payment and loss of stores etc.) if stores supplied without any valid delivery period as purchaser reserve the right to reject the delivery and terminate the supply order.

### 2. Delivery schedule: As per para 16 under Chapter 4.

- a) Date on which all the stores as per supply order have been delivered to the consignee shall be treated as final date of delivery of stores for calculating liquidated damages etc.
- b) Successful bidder is required to apply to IMD for extension of delivery period along with justification and obtain the same before dispatch. In case successful bidder dispatches the goods without obtaining an extension, it would be doing so at its own risk and no claim for payment for such supply and or any other expense related to such supply shall be against IMD.

### 3. Force Majeure:

Force Majeure means an event beyond the control of the supplier and not involving the supplier's fault or negligence and which is not foreseeable. Such events may include, but are not restricted to, acts of the purchaser either in its sovereign or contractual capacity, wars or revolutions, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes, lockouts, and freight embargoes. If there is delay in performance or other failures by the supplier to perform its obligation under its contract due to event of a Force Majeure, the supplier shall not be held responsible for such delays/failures. **If a Force Majeure situation arises, the supplier shall promptly notify the purchaser in writing of such conditions** and the cause thereof within twenty-one days of occurrence of such event. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event. If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason.

Force Majeure for a period exceeding sixty days, either party may at its option terminate the contract without any financial repercussion on either side. There may be a Force Majeure situation affecting the purchase organization only. In such a situation, the purchase organization shall take up with the supplier on similar lines as above for further necessary action.

*Handwritten signatures and text:*  
 Anjio Anjan  
 [Signature]  
 [Signature]

#### 4. Warranty:

The warranty shall be Onsite warranty for two years after successful commissioning of AWS systems and its subsystems. All stores, to be supplied, should be free from all defects and faults in material workmanship and manufacture. They should be of the highest grade and consistent with the established and generally accepted standards for material of the type used and in full conformity with the specifications, drawings, or samples and shall, if operable, operate properly. The Seller shall be bound to furnish a clear written warranty regarding the same. The Seller will be required to replace them free of cost inclusive of all freight and handling charges. The supplier shall provide warranty certificate from the OEM for the goods along with date of manufacturing of stores/products. The supplier shall take over the replaced parts/goods after providing their replacements and no claim, whatsoever shall lie on the purchaser for such replaced parts/goods thereafter. Transportation cost and Octroi etc., for sending defective parts for repairs and sending back repaired or replaced one to the IMD Agro AWS site(s), shall be borne by supplier itself. Other condition under warranty clause of "Chapter- 4 Specifications and allied Details" section shall also be applicable.



#### 5. Comprehensive Annual Maintenance Contract (CAMC):

The Purchaser/Consignee reserves the rights to enter into Comprehensive Maintenance Contract between Consignee and the Supplier after the completion of warranty period. CAMC shall be only for the maintenance of stores (equipment and software only). Prospective bidders are advised to quote accordingly and specifically. The cost of CAMC per year should not be less than 5% (Five percent) of the total cost of list of deliverables after excluding price for all services and CAMC from list of deliverables.

The cost component towards CAMC is to be mentioned and added in the bid by bidders for its evaluation on overall basis to decide the ranking of tender. Payment for maintenance contract is made on every six months basis. The supplier shall enter into agreement with consignee for Five years CAMC.

#### 6. Penalty clause/Liquidated damages clause (LD) for delayed stores & Services:

6.1 The supplier shall deliver the goods and perform the services (like installation & commissioning etc.) under the contract within the time schedule specified by the purchaser in Chapter – 4 and as incorporated in the contract. The delivery date, unless delivery is divided in parts, on which all the items/stores/materials/services etc. as per supply/purchase order are to be delivered shall be taken into account for penalty/LD purpose.

*Atul Anjil Anjan Kumar*  
  


6.1 The purchaser shall, without prejudice to other rights and remedies available to the purchaser under the contract, deduct as penalty/liquidated damages from the contract price a sum equivalent to 1% per week of delay or part thereof on delayed testing & commissioning of the complete Agro AWS as worked out after totaling the cost of all component to a maximum of 10% of the totaling the cost of all component. L/D shall not be imposed under force majeure conditions. Once the maximum is reached purchaser may also consider followings:

- i. Forfeiture of its performance security and
- ii. Termination of the contract for default.

**Note\***

The supplier shall not be held responsible for delay in delivery of stores and their installation for the following reasons:

- i. Delay in providing Entry permits/Road Permits (if required) to the supplier by the consignee.
- ii. Delay in providing proper site(s) by the consignee to the supplier. Site is not ready in all respect (i.e. all civil & electrical at site completed) for installation of stores.
- iii. Delay in providing No Objection Certificate (NOC) required from any other government agency/agencies.
- iv. Communication facility required for the project to be provided to the supplier by the consignee if it is not the responsibility of supplier.
- v. Any other reason for which supplier is not responsible.

6.2 Penalty / Liquidated damages shall be calculated on the purchase/contract price including the element of GST tax, excise duty etc. mentioned in the price bids.

6.3 The supplier shall not dispatch the goods after expiry of the delivery period. The supplier is required to apply to the purchaser for extension of delivery period and obtain the same before dispatch. In case the supplier dispatches the goods without obtaining an extension, it would be doing so at its own risk and no claim for payment for such supply and / or any other expense related to such supply shall be against the purchaser. **The supplier shall inform to the purchaser (CPU) directly in writing about these delays.**

**7. Award Criteria and Tolerance Clause:**

The purchase order /supply order shall be awarded to the eligible responsive tender evaluated as the most economical, technically qualified and suitable to the requirements subject to the availability of funds. The buyer may increase or decrease the quantity by  $\pm 25\%$  at the same rate and terms and conditions as per manual for procurement of goods as per GFR 2017.

*Arvind Anjia Anjan Khush*  
*Uchhab*



If some additional Agro AWS are required, IMD may place an additional supply order at the same cost and same terms and conditions of the present tender, following GFR 2017

#### 8. Modification of contract

If necessary, the purchaser may, by a written order given to the supplier at anytime during the currency of the contract, amend the contract by making alterations and modifications within the general scope of contract. If the supplier doesn't agree to the adjustment made by the purchaser, the supplier shall convey its views to the purchaser within fifteen (15) days from the date of the supplier's receipt of the purchaser's amendment / modification of the contract.

#### 9. Taxes and Duties in India:

##### 9.1 Duty and Local Taxes:

As per prevailing GST or any other taxes imposed by Government of India. The supplier shall pay IGST/SGST and other taxes wherever applicable as per existing rules at that time. Normally materials to be supplied to Govt. Department against Govt. contracts are exempted from levy of town duty, Octroi duty, terminal tax and other levies of local bodies. The local Town/Municipal Body regulations at times, however, provide for exemption only on production of exemption certificate from any authorized officer. Contractors should ensure that stores ordered against contracts placed by this office are exempted from levy of town duty/Octroi duty, Terminal tax or other local taxes and duties. Wherever required, they should obtain the exemption certificate from the indent or /consignee concerned, to avoid payment of such local taxes or duties. The supplier shall pay the Octroi, entry tax etc. if exemption certificate not agreed by local authorities and same may be got reimbursed from the purchaser on proof of payments.

##### 9.2 Supply of Road Permits by the Indent or /consignee:

In all such cases where the requirement of Road Permit for entry of goods into a particular State is mandatory, the following provisions shall be strictly followed:

- i. The supplier shall request the Indent or /consignee for providing Road permit/ Way bill within 10 days of the receipt of the Supply order. The supplier shall furnish all the necessary information and documents in this regard to Indenter/consignee.
- ii. On receipt of the above request from the supplier, the indenter/consignee concerned shall arrange to provide the Road permit/Way Bill in the prescribed form to the supplier within a maximum period of two weeks so that the same reaches the supplier before the dispatch of the stores. However, in cases where the Road permit/Way Bill is issued on proof of actual invoice of the material, the consignee shall arrange to provide the Road permit/Way Bill from appropriate authorities within a maximum period of 5 days from the receipt of invoice.
- iii. The supplier shall pay the local charges/taxes (Octroi etc.) if exemption certificate not agreed by local authority and same will be reimbursed by the purchaser on submission of receipt.
- iv. The supplier shall not be held responsible for any delay in supply due to non- supply/delayed supply of Road permit

*Handwritten signature: Anil Anja - Khand...*  
*Handwritten signature: (Deligul)*

### 9.3 Income Tax and service tax etc.:

Tax deducted at source (TDS) shall be done before making payment to the suppliers as per existing law of Ministry of Finance, Govt. of India in force. The bidders may visit website of Income Tax Department of India for details of Tax Liabilities, Rules, and Procedures etc. The bidders shall have to provide their Permanent Income Tax Number (PAN) and GST registration number. All the applicable taxes such as GST etc. shall be borne by the vender.

### 9.4 Terms and Mode of Payment

Payment, as per terms mentioned below, shall be made subject to recoveries, if any, by way of liquidated damages /penalty clause /TDS or any other charges as per terms & conditions of contract if not specified elsewhere in the document.

#### 9.4.1 **Cases where installation & Commissioning is to be done by bidder**

- (i) Sixty percent (60%) of **contract value of stores** after receipt of goods at sites, successful installation at each agro AWS site and Server installation (at Pune) with all its associated peripherals, software including applications also.
- (ii) Thirty percent (30%) after testing, commissioning of each Agro AWS and Server installation (at Pune) with all its associated peripherals, software including applications.
- (iii) Remaining 10% after SUCCESSFUL completion of the project (successful commissioning of all 330 Agro AWS and commissioning of server and all its application software).
- (iv) Retention of 20% payment for on account bills will be made towards warranty period performance and retention money will be released on submission of unconditional irrevocable Bank Guarantee as per Format given in Annexure X for the warranty period.
- (v) It is to be noted that the bidder may submit bills for payment after completion of supply, installation and commissioning for First lot of 30 numbers of Agro AWS and CDRPS and subsequently for minimum 50 Numbers of Agro AWS.
- (vi) 100% payments towards services like Training, Installation & commissioning charges etc., if any, after their executions, completions and acceptance.
- (vii) Necessary documents must be submitted for the release of payments.
- (viii) The following documents shall be submitted:
  - a) Three copies of supplier's invoice showing contract number, goods

*Atul Anjil Anjan Khush*  
*Uchhal*

description, quantity, unit price and total amount.

- b) Consignee Receipt Certificate in original issued by the authorized representative of the consignee.
  - c) Copies of Delivery Challan identifying contents of each package.
  - d) Inspection certificate by the nominated Inspection agency, if any.
  - e) Training report, if any.
  - f) Insurance Certificate.
  - g) Final Acceptance Report from consignee.
- 9.4.2** The supplier shall send its claim for payment in writing, when contractually due, along with relevant documents etc., duly signed with date, by the consignee – **Head, AASD, IMD, NEW DELHI.**
- 9.4.3** Bills/invoices must be submitted separately for stores and services.
- 9.4.4** The bidder shall submit particulars of his bank account required for making payments.
- (a) Account Name
  - (b) Account Number
  - (c) Bank Name
  - (d) Branch Name(s) Address
  - (f) IFS code
  - (g) MICR No.
  - (h) Telephone No.
  - (i) SWIFT code etc.
- 9.4.5 Payment to be made during Comprehensive Annual Maintenance Contract (CAMC)**
- (i) Payment of CAMC charges shall be made on half yearly basis on **the basis of satisfactory performance certificate issued by the users which will start after completion of successful two years warranty.**
  - (ii) Payment shall be made on the basis of certificate issued by the consignee authority/coordinating **Nodal officer of AASD, IMD, and New Delhi** subject to recoveries/adjustment, if any, by way of liquidated damages/penalty clause or any other charges as per terms and conditions of contract.

#### 10. Fall Clause

The bidder undertakes that it has not supplied /is not supplying similar products/systems or subsystems at a price lower than that offered in the present bid in respect of Ministry /Department of the Government of India or Public Sector Unit (PSU) and if it is found at any stage that similar products /systems or subsystems was supplied by the BIDDER to any Ministry /Department of the Government of India or Public Sector Unit (PSU) at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and difference in the cost would be refunded by the BIDDER to the BUYER (India Meteorological Department) or it will be adjusted from their bills, if the contract has already been concluded.

*Atul Anjia Anjan* *Khandu* *gurus*  
*Wodigub*

**11. Termination of tender /contract by the Purchaser:**

From the time of submission of tender to the time of awarding the contract, if a Bidder needs to contact the purchaser for any reason relating to this tender enquiry and / or its tender, it should do so only in writing. In case a Bidder attempts to influence the purchaser in the purchaser's decision on scrutiny, comparison & evaluation of tenders and awarding the contract, the tender of the Bidder shall be liable for rejection in addition to appropriate administrative actions will be taken against that Bidder, as deemed fit, by the purchaser. The purchaser, without prejudice to any other contractual rights and remedies available to it (the purchaser), may, by written notice of default sent to the supplier, terminate the contract in whole or in part, if the supplier fails to deliver any or all of the goods or fails to perform any other contractual obligation(s) within the time period specified in the contract, or within any extension thereof granted by the purchaser. In the event of the purchaser terminating the contract in whole or in part, the purchaser may procure goods and /or services similar to those cancelled, with such terms and conditions and in such manner, as it deems fit, and the supplier shall be liable to the purchaser for the extra expenditure, if any, incurred by the purchaser for arranging such procurement. If the supplier becomes bankrupt or otherwise insolvent, the purchaser reserves the right to terminate the contract at any time, by serving written notice to the supplier without any compensation, whatsoever, to the supplier, subject to further condition that such termination will not prejudice or affect the rights and remedies which have accrued and / or will accrue thereafter to the purchaser.

**12. Arbitration Clause**

If dispute or difference of any kind shall arise between the purchaser and the supplier in connection with or relating to the extension of contract, the parties shall make every effort to resolve the same amicably by mutual consultations. If the parties fail to resolve their dispute or difference by such mutual consultation within twenty-one days of its occurrence, then, unless otherwise provided in "Chapter-4 Specification and Allied Technical Details" either the purchaser or the supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided the applicable arbitration procedure will be as per Indian Arbitration and Conciliation Act, 1996. In the case of a dispute or difference arising between the Purchaser/ Consignee and all suppliers relating to any matter arising out of or connected with the contract, such dispute or difference shall be referred to the sole arbitration of an officer, appointed to be the arbitrator by the Director General of Meteorology. The award of the arbitrator shall be final and binding on the parties to the contract. Each party shall bear its own cost.

**Venue of Arbitration:** The venue of arbitration shall be the place from where the contract has been issued, i.e., DGM, New Delhi. The contract shall be interpreted in accordance with the Laws of Court in India.

**13. SPECIAL CONDITIONS OF CONTRACT (SCC)**

- a) The bidders must have ISO certification.
- b) Technical evaluation may consist of presentation by bidder (Presentation must include point to point details as per Schedule of Requirements, Specifications & allied Technical Details of the tender document).
- c) Technical evaluation of the systems will be done by a nominated committee constituted by the competent authority and Supply order will be issued to successful bidders after complete evaluation of the bids and approvals.



*Rahul Anjil Anjan* *Venkat* *Srinivas*  
*Udayan*

**Chapter- 4****Specifications and allied Technical Details****INDEX**

<b>Para</b>	<b>Content</b>	<b>PageNo</b>
1	Introduction	27
2	Scope of tender	27
3	Overall Requirements	28
4	Specifications of sensors	30
5	Power Supply	34
6	Specifications of DAS and GPRS Modem	35
7	Installation and Commissioning of the System	39
8	GPRS Network Service	40
9	Design, Development and maintenance of AGRO AWS website	41
10	Design, Development and maintenance of mobile API for AGRO AWSdata	42
11	Development of API - Agro AWS, AWS, ARG for all state of India	43
12	Central data receiving and processing system (CDRPS)	43
13	Specification of hardware and software for CDRPS	44

*Atul Anjil Anjan Khandu*  
*20/02/2022*  
*10/02/2022*

14	Compliance statement	53
15	Onsite comprehensive warranty and CAMC for Agro AWS and CDRPS	54
16	Delivery schedule	55
17	Training	56
	Annexure A-(Tentative list of Agro AWS sites)	57
	Annexure B-(Schematic diagram of Agro AWS site)	69
	Annexure C-(Details of Agro AWS site preparation and dismantle of OldMast and fencing at AWS sites)	71
	Annexure D -(Terms and Conditions during Two years comprehensive warranty and Five years comprehensive annual maintenance contract for Agro AWS)	72
	Annexure E-(Terms and Conditions during Two years comprehensive warranty and Five years comprehensive annual maintenance contract for Central Data Receiving and Processing System at Pune)	73
	Annexure F-(List of deliverables)	78

## 1. INTRODUCTION

India Meteorological Department owns and operates a network of 700 Satellite based AWS across the country. As part of augmentation of surface observation network, IMD is in process to install 200 GPRS based Agro AWS. To further enhance Agromet services, IMD proposes to install 330 GPRS based Agro AWS at additional 200 District Agro Met Units (DAMUs) & 130 AMFUs)

The tentative list of AWS sites is given in Annexure-A.

## 2. SCOPE OF TENDER

- 2.1 The supplier shall have full responsibility to execute the project on a **TURN-KEYBASIS** by taking up the supply, installation, integration and commissioning of 330 Agro AWS equipment at various sites (Annexure-A), new Central Data Receiving and Processing System (CDRPS) at IMD Pune , WEB design, Mobile APP and API. All systems will have comprehensive annual maintenance contract of the system for Five years after expiry of Two years comprehensive Warranty.
- 2.2 Supply, transportation and delivery of all equipment consisting of sensors, Data Acquisition System (DAS), batteries, solar panels, FRP Enclosures, transmission systems incorporating **Dual SIM 4G GPRS modems** (3G Compatible), Servers, Application software for data reception and processing and other related accessories/deliverables etc. at respective sites. **In future, if any of this technology becomes obsolete during comprehensive warranty and CAMC period, the same should be replaced with higher compatible version available free of cost. Both the SIMs should not be of same generation as well as same service provider and higher should be compatible to lower generation.**
- 2.3 Supply of masts, fencing material and all required sensor mounting accessories such as cables, mounting arms/booms connectors, conduits, switches, transient protectors etc. for field installation at respective Agro AWS sites.
- 2.4 Details of site preparation as specified in Annexure-C
- 2.5 Dismantling of old Agro AWS including 10m X 10 m fencing, Gate & 10m mast with buyback policy. The cost of materials in buy back policy should **not be less than 10% of the total cost of mast, gate and fencing materials quoted by the Bidders.**
- 2.6 Installation, integration and commissioning of Agro AWS at all field sites including civil work regarding site preparation, cable laying and all such work required to be done at field site for functioning of the system.
- 2.7 The **Central Data Receiving and Processing System** (CDRPS) at Pune shall be able to operate the network of about **40,000 AWS consisting of** Agro AWS(330 under this project, existing 200 and another 130 planned in future), AWS and ARG stations (IMD, State and Central Government Agencies etc.); Receive the data through FTP, API; process it and perform the quality control; thus significantly improving the quality of the data (completeness, accuracy), Disseminate to users (Synop as WMO code format- ASCII and BUFR code), as per Agrimet requirement and also to upload on the website.
- 2.8 **Development of website** (both in Hindi and English) as per GOI guidelines of the Website, SQL database driven approach, Linux based OS, use of latest software and also takes up maintenance of website. The successful bidder has to update and

*Handwritten signatures and initials:*  
 Anil Anjan Kumar  
 [Signature]  
 [Signature]

upgrade the OS and Application software, licenses as well as website (developed) as per user requirement during two years warranty period and five years CAMC period.

- 2.9 **Development of API for Agro AWS data, AWS data, ARG data and also** for every state.
- 2.10 The supplier has to do preventative maintenance as well as intercomparing of Agro AWS data with travelling standards at ARG sites. The supplier should have travelling standards kit (as per WMO standard) of AGRO AWS sensors and is to be tested and calibrated every year (January/ February month) with available calibration facilities at IMD Pune on payment basis.
- 2.11 **Data from AWS should be disseminated to three users via FTP and also three Email address in .CSV format. The details of IMD data format for dissemination will be provided by IMD. The bidder has to configure DAS for data transmission as per user defined time interval (1 min to 1 hour) as well as destinations and ensure the timely data reception at CDRPS, Pune.**
- 2.12 The successful bidder has to provide **Comprehensive Warranty for Two years followed by Comprehensive Annual maintenance contract (CAMC) for next Five Years to 330 Agro AWS, CDRPS (Servers, Receiving and processing software etc.).**
- 2.13 **The cost of CAMC per year should not be less than 5% (Five percent) of the total cost of list of deliverables after excluding price for all services and CAMC from list of deliverables.**
- 2.14 The Comprehensive AMC will be reviewed every year after completion of two years warranty and can be extended depending upon the performance of the supplier during the previous year of CAMC period. In case of technology transitions, CAMC may not be extended and may even be terminated, if required.
- 2.15 In case, some of the items supplied by the bidder bear the warranty from OEM, then OEM's warranty shall be passed to the consignee.

### 3. OVERALL REQUIREMENTS

- 3.1 The Agro AWS equipment along with data communication system should incorporate the state-of-the-art technology and provide capability for unattended operation in all weather conditions. The system shall run using Sealed Maintenance Free (SMF) battery(s), rechargeable through a solar panel. The battery shall be capable to run the system for minimum period of **20 days** on full load during total cloudy or foggy conditions **without charging through solar panel**. The bidders shall provide power budget calculation in the technical bid.
- 3.2 The Agro AWS data (.csv format) shall also be received at IMD Central Server via FTP service facility as per user defined time interval (1 min to 15 min) and via email to Local DAMU site as per user defined time interval (15 min).
- 3.3 All equipment should be qualified for MIL GRADE or better specifications and suitable for outdoor applications.
- 3.4 The DAS, GPRS modem, SMF battery and Solar Charge controller must be housed in a **FRP Enclosure**.
- 3.5 All sensors should be interfaced with DAS as per IMD requirement. At selected sites (DAMUs), it should be possible to install two wind sensors at different heights (3m and 10 m) and both the sensors to be interfaced with DAS. In addition,

*Atul Anil Anjan Kumar*  
*U. D. G. S. B.*



soil sensors (soil temperature and soil moisture) at multiple depths (10 cm, 30 cm, 70 cm and 100cm) and sunshine duration sensors should also be interfaced with DAS.

- 3.6 Software with provision for real time quality control of AWS data (to be applied at DAS in the field site).
- 3.7 The system shall have facility to issue command for forced/manual transmission of data at field site, remotely and as well as through mobile SMS using proper authentication and also DAS Configuration, if required.
- 3.8 The system shall have time synchronization (time keeping) via GPS or GPRS modem/Internet.
- 3.9 The ONLINE Training of 25 IMD officials at RMCs and MCs across India for Operation and Maintenance of System shall be provided by the bidder. The field training should also be provided to the nodal officers designated by IMD at all Agro AWS field sites installed at AMFUs and KVKs. The details of training to be imparted with syllabus / items to be covered and topic wise duration for both ONLINE training and Field training shall be provided to the consignee well in advance for approval by IMD.
- 3.10 Ensure support for Agro AWS systems and its sensors and spares for 10 years via a written undertaking on bidder's letterhead.
- 3.11 Details of network block diagram and Schematic diagram of AWS site with 10 meter Tilttable mast is given in **Annexure- B**
- 3.12 **The OEM certificate for all items is essential for all bidders and to be submitted in the technical document otherwise technical bids will not be considered.**
- 3.13 Bidders have to submit technical literature for all their offered sensors and all the calibration certificates along with the technical bid.
- 3.14 All the offered sensors (except soil sensors) of bidders shall be tested initially at test/ calibration facility available at IMD Pune if TEC desires/ recommends.
- 3.15 Power budget calculation for continuous operation of 20 days without charging through solar panel is to be submitted by the bidders with their technical documents.
- 3.16 **Demonstration of Agro AWS** with suitable soil moisture conditions prevailing at the demo site shall be carried out by the bidders for about 30 days **at No cost and No commitment basis as a part of Technical Evaluation**. A full set of all the quoted sensors and accessories are to be installed on 3m mast at Demo site at **New Delhi** to evaluate reliability/ fulfillment of the technical requirements including DAS, sensors, GPRS communication, SMF battery life, solar panel output and power budget etc. The entire system should run for 20 days continuously without charging through solar panel. Failure and/or Non-compliance of any component during the above period will be liable to cancel/ rejection of the bid. The TEC will decide the time and duration of testing of the soil moisture sensors. The firm shall be ready to demonstrate within one month, once they will be informed by TEC. No further extension for demonstration will be given in any circumstances except non availability of suitable moisture conditions at site. The demonstration may be completed only once the soil sensors data validation with suitable moisture conditions prevailing at the site. The weather sensors and solar radiation sensors may/shall also be tested at IMD Pune before the start of Demonstration at field site.

*Arul Anjil Arjan* *Kumar* *2022*  
*[Signature]*

**4. SPECIFICATIONS OF SENSORS**

For all sensors (except soil sensors) offered, valid certification or traceable from NIST (National Institute for Standards and Technology, USA) /IMD /WRC is to be submitted.

For soil sensors, valid Certification from reputed International/ Indian institute/ OEM are to be submitted.

**All Sensors quoted should be well proven sensors; its performance certificate from users is to be submitted in technical bids for last Five years.**

<b>4.1</b>	<b>Temperature and Relative Humidity Sensor with Radiation Shield</b>	
<b>4.1.1</b>	<b>Air Temperature</b>	
	a. Sensor type	Pt 100 RTD
	b. Measurement Range	-20 °C to +60 °C
	c. Accuracy (with radiation shield)	± 0.20 °C or better for +10°C to +60 °C ± 0.35 °C or better for -20°C to +10 °C
	d. Resolution	0.1 °C
	e. Response Time	20 sec or better
<b>4.1.2</b>	<b>Relative Humidity</b>	
	a) Measurement Range	10% to 100%
	b) Accuracy (including non-linearity, hysteresis and repeatability)	± 3% RH or better with membrane filter
	c) Response time	20 sec or better
	d) Resolution	1% or better
	e) Sensor type	Capacitive / solid state
<b>4.1.3</b>	<b>Radiation Shield</b>	
	a) Type	Thermoplastic
	b) Louvred	Minimum 9
	c) Ventilation	Natural
	d) Mounting Accessories	Aluminium Mounting bracket and Stainless-steel U Bolt clamp

*Handwritten signature: Anjia Anja Kumar*  
*Handwritten signature: [Signature]*



<b>4.2</b>	<b>Wind Sensor (2DUltrasonic)</b>	
<b>4.2.1</b>	<b>Wind Speed</b>	
	a) Range (Operation)	0 to 60m/s or better
	b) Sustainability	Up to 60 m/sec
	c) Accuracy	± 0.5 m/s or better
	d) Resolution	0.1 m/s
	e) Threshold	0.5 m/s or less
	f) Response time	2sec or better
	g) Output	Digital
<b>4.2.2</b>	<b>Wind Direction</b>	
	a) Range	0 to 359 Degrees
	b) Accuracy	±5 degrees or better
	c) Resolution	1 deg. or better
	d) Response time	2sec or better
	e) Output	Digital
<b>4.3</b>	<b>Pressure (Solid state digital pressure transducer (Temperature compensated))</b>	
a)	Range	600 to 1100 hPa
b)	Accuracy	± 0.2hPa or better
c)	Resolution	0.1 or better
d)	Output	Digital
e)	Response time	1 sec or better
<b>4.4</b>	<b>Tipping Bucket Rain Gauge</b>	
	a) Orifice Size/ collector diameter	Specified Diameter of the collector rim should be 200 mm
	b) Collector Area	Specified Collector Area should be between 314 cm <sup>2</sup>
	c) Switch	Rugged Magnetic Proximity
	d) Resolution	0.5 mm per tip or better
	e) Output	0.1 sec switch closure

*Paul Anjo Anjan*  
*Wade*  
*Wade*

	g) Accuracy	±2% or better, for rain rate up to 25 mm/hr ±3% or better, for rain rate between 25mm/hr to 50 mm/hr ±4% or better, for rain rate between 50mm/hr to 100 mm/hr ±5% or better, for rain rate>100 mm/hr
	h) Material of Outer Body/housing (Base/Collector)	For coastal salt air application and other corrosive environments, the gauge should be offered with marine grade stainless steel or Fiber glass Reinforced Plastic (FRP) or UV resistant ABS plastic or anodized Aluminium alloy (Al 99.5 grade) Suitable for coastal environment.
	i) Levelling	Suitable levelling adjustment screws and circular spirit level must be provided on the base of TBRG for levelling the Tipping bucket Mechanism.
	j) Debris protection filter	Suitable (Wire mesh) debris protection filter should be provided inside the Collector.
<b>4.5</b>	<b>Tipping Bucket Rain Gauge sensor or better technology with heater (Rainfall monitoring and also Measurement of the water equivalent of the snow in the funnel)</b>	
	a) Sensor type	Tipping Bucket with Heater
	b) Heating element with power supply cable	Low power requirement and power supply for heating element may be 12 V DC Battery supply
	c) Collector Area	Specified Collector Area should be between 200 cm <sup>2</sup> to 325 cm <sup>2</sup>
	d) Height above funnel	Height above funnel should be sufficient to accumulate rain during heavy rainfall / snow.
	e) Switch	Rugged Magnetic Proximity
	f) Resolution	0.5 mm per tip or better
	g) Accuracy	±2% to ±4% or better, for rain rate up to 25 mm/hr to 100 mm/hr ±5% or better, for rain rate>100 mm/hr
	h) Material of Outer Body/housing (Base/Collector)	Rust Proof Housing.

*Arjun Anjan*  
*Arjun Anjan*  
*Arjun Anjan*

	i) Levelling	Suitable levelling adjustment screws and circular spirit level must be provided on the base of TBRG for levelling the Tipping bucket Mechanism.
	l) Debris protection filter	Suitable (Wire mesh) debris protection filter should be provided inside the collector.
<b>4.6</b>	<b>Soil sensors at four depths (10cm, 30 cm, 70 cm and 100 cm)</b>	
<b>4.6.1</b>	<b>Soil Temperature</b>	
	a) Range	-10 °C to +60 °C
	b) Accuracy	± 0.5°C or better
	c) Resolution	0.1 °C or better
	d) Sensor type	Resistive
	e) Output	Digital
<b>4.6.2</b>	<b>Soil Moisture</b>	
	a) Range	0% (complete dry soil) to 100% (fully wet (saturated) soil).
	b) Sensor technology	TDR/FDR
	c) Measurement	m <sup>3</sup> /m <sup>3</sup> (volumetric type)
	d) Accuracy	± 5 % or better for all types of Indian soil
	e) Resolution	0.1 or better
	f) Output	Digital
	g) Calibration	Calibrated with the soil where it is to be installed
<b>4.7</b>	<b>Solar Irradiance Sensor</b>	
	(a) Sensor	Thermopile based pyranometer
	(b) Spectral range	300 – 2800 nm ± 10nm
	(c) Methodology	Should measure total incident global radiation
	(d) Response time	1sec or better
	(e) Maxi solar irradiance	1800 W/m <sup>2</sup> or more
	(f) Threshold Stability/year	±1% or better
	(g) Latitude for use	locations in India
	(h) Field of view	180° (Hemispherical)
	(i) Output	Analogue/Digital
	(j) Operating Temperature & humidity	-20 ° C to +60° C 0 to 100% RH
	(k) Shielded Cable length	As per actual (Approx. 5 meters)
	(l) Mounting bracket	Weather proof and corrosion resistant, levelling bubble

	(m) Mounting Assembly	It accommodates all mounting accessories, includes U-bolt and nuts for fixing the sensor on 10 m mast and also made of stainless steel.
4.8	<b>Quantum PAR sensor</b>	
	(a) Sensor	Silicon photovoltaic detector based solid state sensor
	(b) Spectral range	Quantum response 400 – 700 nm $\pm$ 5nm
	(c) Methodology	Should measure PPFD ( $\mu\text{mol m}^{-2} \text{s}^{-1}$ )
	(d) Measurement Range	0 – 4000 $\mu\text{mol m}^{-2} \text{s}^{-1}$ or better
	(e) Response time	1sec or better
	(f) Cosine Correction	Upto 80° angle of incidence
	(g) Cosine response	$\pm$ 5% or better at 75°
	(h) Threshold Stability/year	$\pm$ 2% or better
	(i) Latitude for use	All locations in India
	(j) Field of view	180° (Hemispherical)
	(k) Output	Digital / Analogue
	(l) Operating Temperature & humidity	-20 ° C to +60° C; 0 to 100% RH
	(m) Shielded Cable length	As per actual (Approx. 5 meters)
	(n) Mounting bracket	Weather proof and corrosion resistant
	(o) Mounting Assembly	modates all mounting accessories, includes U-bolt and nuts for fixing the sensor on 10 m mast and also made of stainless steel.

## 5. POWER SUPPLY

- 5.1 The complete Agro AWS station shall have capability for unattended operation at remote place using **Sealed Maintenance Free (SMF) Battery**, Solar Charge controller (**Maximum Power Point Tracker-MPPT**) and rechargeable through a **Solar panel ( Mono Crystalline)**.
- (i) **Battery:** Suitable capacity SMF (**Sealed Maintenance Free Battery**).
- (ii) **Solar Charge controller (MPPT):** It should charge the supplied SMF battery with suitable solar panel and also Over-load protection, Short circuit protection, Protection from the lightning strike and Under-voltage protection.
- (iii) **Solar Panel (Mono Crystalline type):** Suitable solar panel to charge the SMF battery.
- 5.2 The Supplier must attach a detailed **POWER BUDGET CALCULATION** taking care of solar panel and battery efficiency and sufficient safety factor of the system supported with documentary proof in technical bid for power consumption of the Agro AWS so that it should run for 20 days during cloudy day and also without charging the battery by solar panel .The detailed power consumption of each component of the Agro AWS system must be clearly mentioned in the technical brochures to support Successful bidder's statement.

*Handwritten signatures and text:*  
 Anil Anjan Kumar  
 Chelgub

## 6. SPECIFICATIONS OF DAS AND GPRS MODEM

**The DAS should be well proven system. Its performance certificate from users is to be submitted for last five years.**

- (i) The DAS shall have facility to sample the output of the attached sensors with user selectable sampling interval.
- (ii) There should be provision of Maximum wind observation (Gust and squall) for both the wind sensors along with their time stamp and send to IMD Server.
- (iii) The DAS should have provision to interface all the sensors installed at the site.
- (iv) All DAS should have suitable port to interface with any external display unit. The protocol details of data transmission (every minute logged data) through this port have to be documented properly by the bidder in its technical bid so that any authorized user can interface their device/ display unit.
- (v) The sampling and measurement interval for individual parameters shall also be user selectable.
- (vi) The DAS should have capability to store the data for specified parameter at user defined intervals in distinct multiple log files for each sensor and other related parameters (data volume 1GB or more).
- (vii) The stored data shall be retrievable via serial port/ USB port/Ethernet port to a PC/laptop and a pen drive or any other compact and commercially available solid-state memory device in standard text file format without requirement of specific software to retrieve the data.
- (viii) DAS should have keypad (Non touch screen) and backlit LCD/LED display (internal/external unit) with menu driven facility to display the command, data characters.
- (ix) All the Analog, Digital and SDI-12 channels in the DAS must be compatible to the sensors supplied and integrated with the system.
- (x) The DAS should have at least four built-in high-performance analog channels, adequate number of built-in digital channels to accommodate digital output of all the sensors with RS-232 ports in the form of standard DB9 connector, RS-485, SDI-12, counter channels for rainfall measurement.
- (xi) The DAS shall have suitable interface for 4G Dual SIM GPRS modem (3G Compatible). Bidder shall install two SIMs from two different service providers, whose signal strength is best available on respective site.
- (xii) It shall be possible to configure, transfer the DAS setup, customize programs etc. or software up-gradation by interfacing DAS with a laptop or PC through RS-232 port/Ethernet port/USB port etc., with proper user authentication.
- (xiii) DAS should have provision to accept SMS command from remote mobile for:
  1. Remote configuring DAS for communicating data to minimum Three Servers.
  2. Remote entry of off set and Cal factor for DAS.
  3. Changing time interval of server communication from 1min to 15min.
  4. Display current data.

*Atul Anjil Anjan* *Handwritten signature*  
*(Circular stamp)*

5. Monitoring the signal strength of mobile network.
- (xiv) The DAS shall be able to accept all sensor inputs without external signal conditioning.
- (xv) Provision to access to the DAS through GPRS modem shall also be made with password protection.
- (xvi) In order to facilitate data processing, the DAS shall have a provision for 24-hour Real-Time Clock (RTC) powered by a battery (with min. one-year lifetime) to ensure that time is maintained even during power outages. The DAS shall have provision to easily include and change the "Unique station identification code", "Station Name", "Time of observation and transmission", "Measurement schedule" and "Sensor identification information", for all parameters, as mandatory requirements. Any change in the DAS should be properly logged along with user, date and time details.
- (xvii) DAS should have facility to calculate and disseminate Daily Maximum Temperature at 12 UTC (Generated from yesterday 3 UTC to 12 UTC observed data); Daily Minimum Temperature at 03 UTC (Generated from yesterday 12 UTC to today 03 UTC observed data) from every minute logged data in the DAS to Central Server.
- (xviii) Provision of generating Daily Maximum Relative Humidity at 03 UTC (Generated from yesterday 12 UTC to today 03 UTC observed data) and Minimum Relative Humidity at 12 UTC (Generated from 03 UTC to 12 UTC observed data today); from every minute logged data in the DAS and to disseminate to Central Server.
- (xix) Maximum Wind speed at interval of 15 minutes or desired interval in DAS from sample of 3 seconds moving average value logged in the DAS to disseminate to Central Server.
- (xx) Average wind data at an interval – 1 minute, 3 minute and 10 minute and taking moving average sample of 3 seconds.
- (xxi) Provision of disseminating the data from Agro AWS site at an interval of 15 minutes; but can be changed (by manual as well as remote command) to 1 minute whenever required during cyclone and heavy rainfall seasons.
- (xxii) The DAS should have a facility to apply Quality Control procedures such as Gross error check and time consistency check for sensors interfaced. Detailed QC procedures and algorithms proposed to be implemented at field sites shall be in accordance with WMO No.8 "Guide to Meteorological Instruments and Methods of Observation" Part-III Chapter 1 and Part-II Chapter 1, Seventh Edition, 2008.
- (xxiii) Data quality control has to be applied as real time QC performed at the Datalogger of Automatic Weather Station (AWS).
- (xxiv) **QC of raw data (signal measurements).**

It is basic QC, performed at an AWS site. This QC level is relevant during acquisition of Level I data and should eliminate errors of technical devices, including sensors, measurement errors (systematic or random), errors inherent in. Some errors introduced during the measuring process must be eliminated.

*Atul Anjil Anjan Kumar*  
*Wahid*



- (xxv) In order to facilitate data processing, the DAS shall have a provision for 24-hour Real-Time Clock (RTC) powered by a battery (with min. one-year lifetime) to ensure that time is maintained even during power outages. The DAS shall have provision to easily include and change the "Unique station identification code", "Station Name", "Time of observation and transmission", "Measurement schedule" and "Sensor identification information", for all parameters, as mandatory requirements. Any change in the DAS should be properly logged along with user, date and time details.
- (xxvi) DAS should have facility to calculate and disseminate Daily Maximum Temperature at 12 UTC (Generated from yesterday 3 UTC to 12 UTC observed data); Daily Minimum Temperature at 03 UTC (Generated from yesterday 12 UTC to today 03 UTC observed data) from every minute logged data in the DAS to Central Server.
- (xxvii) Provision of generating Daily Maximum Relative Humidity at 03 UTC (Generated from yesterday 12 UTC to today 03 UTC observed data) and Minimum Relative Humidity at 12 UTC (Generated from 03 UTC to 12 UTC observed data today); from every minute logged data in the DAS and to disseminate to Central Server.
- (xxviii) Maximum Wind speed at interval of 15 minutes or desired interval in DAS from sample of 3 seconds moving average value logged in the DAS to disseminate to Central Server.
- (xxix) Average wind data at an interval – 1 minute, 3 minute and 10 minute and taking moving average sample of 3 seconds.
- (xxx) Provision of disseminating the data from Agro AWS site at an interval of 15 minutes; but can be changed (by manual as well as remote command) to 1 minute whenever required during cyclone and heavy rainfall seasons.
- (xxxi) The DAS should have a facility to apply Quality Control procedures such as Gross error check and time consistency check for sensors interfaced. Detailed QC procedures and algorithms proposed to be implemented at field sites shall be in accordance with WMO No.8 "Guide to Meteorological Instruments and Methods of Observation" Part-III Chapter 1 and Part-II Chapter 1, Seventh Edition, 2008.
- (xxxii) Data quality control has to be applied as real time QC performed at the Datalogger of Automatic Weather Station (AWS).
- (xxxiii) **QC of raw data (signal measurements).**  
It is basic QC, performed at an AWS site. This QC level is relevant during acquisition of Level I data and should eliminate errors of technical devices, including sensors, measurement errors (systematic or random), errors inherent in. Some errors introduced during the measuring process must be eliminated.
- (xxxiv) **Plausible value check (The gross error check on measured value):**  
Each sample should be examined to check if its value lies within the measurement range of a particular station. If the value fails the check, it is rejected and not used in the further computation of the relevant parameter.
- (xxxv) **Check on Plausible rate of change (The time consistency check on measured values):** This check is to verify the rate of change (unrealistic

*Atul Anjil Anjan Kumar*  
*(Signature)*

jumps in the values). After each signal measurement, the current sample shall be compared to the proceeding one. If the difference of these two samples is more than specified limit then the current sample is identified as suspect and not used for the computation of average. However, it is still used for checking temporal consistency of sample.

**(xxxvi) Check on Inter-sensor checks**

It is possible to make internal consistency checks of a variable against other variables, based upon established physical and meteorological principles.

**(xxxvii) Check on Monthly normal of Each Agro AWS site**

- a) A look up table will be available for each station as per normal of those stations.
- b) MONTHLY NORMAL CHECK AT FIELD SITES WITH THE LOOK UP TABLE available with Data logger

**6.1 GPRS Modem (4G with dual SIM Facility)-Compatible with 3G:**

4G based GPRS Modem (compatible with 3G) with dual SIM facility having provision of fast and reliable wireless data communications along with support for IP based access to the central server IP. The GPRS Modem shall be compatible to all service providers' SIM. The following technical specifications are indicative:

- i. GPRS facility with fast and reliable wireless data communications.
- ii. Remote dial-up facility.
- iii. Shall support SMS, Email and FTP.
- iv. Accept dual standard SIM card.
- v. Ethernet/RS 232/485/USB interface with DAS.
- vi. Indication of network availability (signal strength).
- vii. Suitable High gain GPRS Antenna for reliable communication.

**In future, if any of this technology becomes obsolete during comprehensive warranty and CAMC period, the same should be replaced with higher version available without any cost implication and without any data gap. Both the SIMs should not be of same generation and higher should be compatible to lower generation.**

*Abdul Anjish Anjan Kumar*  
*Wolizal*

## 7. INSTALLATION AND COMMISSIONING OF THE SYSTEM

- 7.1 The Supplier shall be responsible for implementation of the project on a **Turnkey basis providing end-to-end solution.**
- 7.2 **The supplier shall be responsible for supply of all equipment and deliverables including transportation to the field sites safely without any damage**
- 7.3 Site preparation including all Civil and other related works such as construction of concrete foundation for mast and erection of 10 meter Tiltable Mast for Agro AWS, installation and commissioning of Agro AWS including installation of DAS, interfacing of sensors, installation and configuration of communication system, site levelling, installation of fencing shall be the responsibility of the Successful bidder.
- 7.4 The supplier shall undertake installation work in presence of Nodal officer designated by IMD office and IMD official deputed for the purpose. The Nodal officer and IMD official will commission the system/station after successful continuous verification of one-week uninterrupted data quality.
- 7.5 The Hardware and software - server, application software, website, UPS and associated peripherals should be installed at IMD Pune as per IMD requirement and shall have support for the changes as and when it is required during warranty and Comprehensive AMC.
- 7.6 The Pressure sensors should be kept in enclosure box having DAS.
- 7.7 The Air Temperature & Relative Humidity sensor, Wind sensors, sunshine duration sensor shall be mounted on separate booms/arms of at least 1.5 m length. The booms/arms shall be fixed horizontally on the mast at 2 m height for AT/RH sensor, 3 m height for first Wind sensor and 10 m height for second wind sensor. TBRG sensor shall be installed at 3m distance from the mast. Sunshine duration sensors shall be installed at 2 m height. Soil sensors are to be installed at four depths: 10 cm, 30 cm, 70 cm and 100 cm at approx. 3m distance from them as opposite to TBRG.
- 7.8 All cabling in the Agro AWS site should be concealed/underground using suitable PVC pipe conduits.
- 7.9 Each site should have a good quality metal sign board (Size: Length 1.2 m x Width 0.9 m) (well protected and rust proof) as depicted suggestive format below, which is painted in English, Hindi and Regional Languages, with the following information

*Arjun Anjan Kumar*  
*Arjun Anjan Kumar*  
*Arjun Anjan Kumar*

<p>Government of India          India Meteorological Department          Automatic Weather station          (Name of the station)  <i>Contact: Head</i>          Regional Meteorological Centre/Meteorological Centre          INDIA METEOROLOGICAL DEPARTMENT          .....</p> <p>Phone:          Fax :</p>
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

The details on signboard will be made in consultation of nodal officer of respective RMCs/MCs.

- 7.10 The supplier shall supply 50 hard bound copies of operation and maintenance manuals and 50 softcopies in USB Drive.

#### 8. GPRS NETWORK SERVICE

- 8.1 The supplier shall arrange to provide reliable 4G GPRS (3G Compatible) network with very good signal strength for all Agro AWS across India from two different reputed commercial network service providers on its company name. The supplier should ensure 90% data reception on daily basis from each Agro AWS site at central server.
- 8.2 The two SIM CARDS should be supplied by the successful bidder and installed by the field sites. All SIM cards should be purchased in the name of the supplier. Two different service providers and have excellent signal strength at Agro AWS site.
- 8.3 The supplier shall also be responsible for payment of recurring charges towards GPRS network service during two years Comprehensive warranty and also for Five years during CAMC period (with provision for further extension based on satisfactory performance for next 4 years on same terms and conditions) after installation and commissioning of the Agro AWS network. During CAMC and extension period, the work performance shall be reviewed on yearly basis and the award of the work order shall be issued based on satisfactory performance of the preceding year.
- 8.4 There should be provision for SMS and IP based communication with DAS remotely to access and configure the DAS through GPRS modem.
- 8.5 Overall requirements for compatibility to a GPRS cellular network shall be ensured by the supplier. Technical specifications in this aspect are broadly indicative. Complete end-to-end solution shall be the responsibility of the successful bidder.

*Anjil Anjan* *Handwritten signature*  
*Handwritten signature*  
*Handwritten signature*

9. **DESIGN, DEVELOPMENT AND MAINTENANCE OF AGRO AWS WEBSITE**

- a) Display of bilingual information in Hindi and English.
- b) Interactive multimedia-oriented home page design.
- c) Multiple banner of inner page
- d) Design of the website as per the GIGW guideline of Govt. of India and to make it user friendly.
- e) Compatible to the entire browser like Chrome, Mozilla firefox, Internet Explorer etc.
- f) Web portal should be Responsive i.e. compatible to Mobile, Tabs, i-Pad6.
- g) Database driven website with CMS (Content Management System) and User Management to manage the requirement from Admin Interface by the multiple users.
- h) Web portal should be free from vulnerabilities.
- i) The website covers information for the following Heads /subheads for public view about the IMD Organisation.
- j) Real time Agro AWS/AWS/ARG data with numerical format as well as graphical format. The details of data display are only indicative and may be changed as per user requirement.
- k) Design and Development of web site as per the requirement
- l) User Acceptance Test and Security Audit.
- m) Resolve all the Vulnerabilities found during security audit before Go- live of the website.
- n) Security audit will be done at least once in a year by any Cert-in empaneled firm/any other organisation assigned by IMD, during warranty and CAMC period. However, bidder has to resolve all the Vulnerabilities found during security audit. Security audit and removal of vulnerabilities shall be the responsibility of the bidder.
- o) Installation of required software and hosting of website in a secured environment and Optimization of website from time to time for better performance.
- p) It should have Admin section.
- q) Admin section will have the following options: A. Users B. Menus

**A. Users:** User creation and Management for the web portal:

*Atul Anjil Anjan Khanna*  
*Atul Anjil Anjan Khanna*

- i) User can be of three types that is Master Admin, General Operation Admin and Departmental User.
- ii) Master Admin can be created more than one but always one will be active.
- iii) Master Admin will create and manage general user who will manage the requirements as per authentication.
- iv) General operation admin will create the departmental user to update their finance and physical progress on implementation of projects and schemes.
- v) Module wise access rights and authentication for functions such as: Publish Add, Delete, Edit, View and Archival etc.
- vi) Audit logs for the users to store for 30 days operation on page wise and after the periods the logs will be auto cleared.
- B. Menu:** Creation of Menu as Global, Primary, Secondary and Sub Secondary Menu as up to 4th level with the option of edit, view, delete and publish.
  - i) Creation and management of highlighted menus with banner and to display as menu with hyper link
  - ii) Link in client side will be hyper linked only on addition of information and published for public view.
  - iii) Positioning and sequencing of menus in the appropriate section i.e. Top bar, Middle bar, Footer, Left side, right side in the home page and central panels in the home page.
  - r) It should have content management to add and delete as per user requirement.
  - s) It should have Maintenance admin with user name and password.
  - t) Support of Website during warranty and Comprehensive AMC period.
  - u) During two year warranty period and Comprehensive AMC, Changes, if required, in the website shall be made as per user requirement without any cost implication.
  - v) **Backup and restoration to be demonstrated and source code of the website to be provided.**
  - w) The bidder shall impart training to IMD officers regarding administration, operation and maintenance of the website developed.

#### **10. DESIGN, DEVELOPMENT AND MAINTENANCE OF MOBILE APP FOR AGRO AWS DATA, AWS DATA & ARG DATA**

- a) API should work on both mobiles having Android and iPhone.
- b) To show live weather data on Android and iPhone
- c) Show all parameters of Agro AWS Data, AWS, ARG.
- d) Daily Max and Min Soil Moisture and soil temperature Data display of Agro AWS.
- e) Daily Maximum and Minimum Temperature Data display of Agro AWS.
- f) Daily Maximum and Minimum Relative Humidity Data display of Agro AWS.
- g) Hourly rainfall, today's rainfall from morning 8:30 to current time

*Arjun Anjan Kumar*  
*Arjun Anjan Kumar*  
*Arjun Anjan Kumar*

- h) Separate stations details with graphical format of data representation.
- i) Public information screen to add for live incident of weather or some time before events data will share to us.
- j) Server URL for web-services which will update every 10 minute duration.
- k) Map subscription for unlimited instance access.
- l) Developer Account needed to upload the apps on various APP stores.
- m) Support for Mobile APP during warranty and Comprehensive AMC
- n) During two years warranty period and Comprehensive AMC for Five years, Changes, if required in Mobile APP, shall be made as per user requirement.
- o) Mobile APP software should be delivered in CDs also.
- p) **Backup and restoration to be demonstrated and the source code to be provided.**
- q) The bidder shall impart training to IMD officers regarding administration, operation and maintenance of the Mobile APP.

#### 11. DEVELOPMENT OF API - AGRO AWS, AWS, ARG FOR ALL STATES OF INDIA

- a) It should be WEB based API.
- b) It should be able to access all Agro and weather parameter that are coming from Agro AWS, AWS and ARG sites.
- c) It is made available for every state of India.
- d) During two year warranty period and Comprehensive AMC for Five years, Changes, if required in API, shall be made as per user requirement
- e) **Backup and restoration to be demonstrated and the source code to be provide d.**
- f) The bidder shall impart training to IMD officers regarding administration, operation and maintenance of the API.

#### 12. CENTRAL DATA RECEIVING AND PROCESSING SYSTEM

- 12.1 The supplier is required to establish the CDRPS at IMD, Pune
- 12.2 The Application software is also required to establish at Six RMCs- Chennai, Delhi, Guwahati, Kolkata, Mumbai and Nagpur. Server with the application software compatibility at all Six RMCs will be procured byIMD separately. The application should run on Linux platform and SQLdatabase.
- 12.3 For CDRPS, Pune, a virtual machine (VM) application should be used for this purpose. A virtual server operates in a "multi-tenant" environment. The architecture of a virtual server is to be designed in such a way that many works can be performed in one physical server.
- 12.4 For VMs, the recovery process can be initiated in just a few clicks with the help of a previously-created VM backup.
- 12.5 A virtual server should have the option of on-demand scalability.

*Anil Anjan Kumar*  
*Cheliga*

- 12.6 A server hosting multiple VMs takes care of underutilized resources by distributing them among other VMs which need it most. This way, optimum capacity management is achieved.
- 12.7 Security management is configurable in a virtual server environment.
- 12.8 Security policies and procedures to be developed and documented.
- 12.9 The CDRPS, Pune will monitor the performance of Agro AWS/AWS/ARG through GUI based portal.
- 12.10 Each Station shall be identified by its name and identification (ID) assigned by IMD.
- 12.11 The CDRPS shall have the capability to provide an overall performance of better than 95% of error free data which shall be demonstrated by the bidder as part of the acceptance test.
- 12.12 The mains power shall be supplied out of a wall mounted Indian standard outlet at 230VAC  $\pm 10\%$ , 50Hz. The bidders shall include all necessary cables, connectors, the power supply with On-line UPS (5 KVA, 12 hours back-up) at Central Data Receiving and Processing System, Pune.
- 12.13 The bidder shall offer complete redundancy of all critical components for a CDRPS indoor and outdoor electronics with facilities for automatic take over and appropriate alarms to commence maintenance of defective components.
- 12.14 The receiving capabilities of the new CDRPS shall include:
- Receiving the data from existing systems (Satellite based TDMA)
  - Receiving the CSV format data via GPRS
  - Receiving the data from the stations from different producers in CSV (Comma Separated Value) format.
  - Receiving the data via SMS
  - Reception and Processing capacity may be considered in view of IMD plans to operate the network of 40000 AWS(including Agro AWS,AWS and ARG stations with 15-minute data collection interval)
- 12.4 The Central Data Receiving System shall have three-tiered Software architecture:
- Database tier using industry standard SQL database
  - Application tier
  - Web client tier
- 12.5 The users shall be able to work with the Central receiving station using the standard web browser.

### 13 SPECIFICATION OF HARDWARE AND SOFTWARE FOR CDRPS

#### A. Central Data Receiving and Processing System (CDRPS) Hardware

The hardware details for reception of data from the network of 40,000 AWS (including Agro AWS, AWS and ARG stations) is given below with its block diagram.

*Atul Anjil Anjan* *Handwritten signature*

*Handwritten signature*



## a) Blade Server ( Qty: 2 Nos.)

Each Blade Server shall have the following configuration:

No.	Specifications		
1	Processor	Number of Cores	At least 32
		Processor Base Frequency ( GHz)	At least 2.1
		Maximum number of Sockets available on Server	2
2	Memory	Type of RAM	DDR4 SD RAM with ECC
		DDR SDRAM Size (GB)	Minimum 256
3	SSD Storage	Type of interface SSD	NVMe
		Total capacity offered with NVMe SSD ( GB)	Minimum 1024
		Total Number of slots available for NVMe SSD	8
		Number of slots populated with NVMe SSD	2
		Capacity usable per NVMe SSD (GB)	960
4	RAID	Nos. of RAID Controller Ports	8
		Speed of RAID Controller Ports (Gbps)	Minimum 12
		Number of Networking Interface cards (LAN)	Minimum 2
5	Ports and Interfaces	Network card supported	1G, 10 G
		Total Numbers of Ethernet ports	2 X 10G SFP+, 4X1G
		OS	Red Hat Enterprise Linux Server, PREMIUM
7	VM	VM with License (2-sockets)	5 Nos.
8	VC	VC with License.	1 No.

## b) Enterprises Storage (Qty.1 No)

No.	Specifications		
1	Type	Storage Type	Unified
		Type of Storage System	Hybrid
2	Storage	Usable Storage Capacity ( TB)	100 Usable
		Disk type	SAS

*Atul Anjil Anjan*  
*(Deligal)*

		Speed of dual ported Disk drive	Minimum 12 Gbps
		Number of Drive slots populated with drives of different type in the storage system	Minimum 60
3	Connectivity /port	Type of Front end ports	FC
		Number of Front end FC Posts	8
		Speed of Front end FC Ports in Gbps	Minimum 16
		Front end FC Port Scalability	Minimum 24
		RAID Level Support	5 or higher
4	Controllers	Number of Controllers/VSD/Node available in the storage System	2
5	System Cache	Total offered cache in TB	0.5
6	Additional Features/Support	Operating system Platform and clustering supported by the storage from day one	Win, RHEL,UX, VMware

**c) SAN switch (Qty. 1No.)**

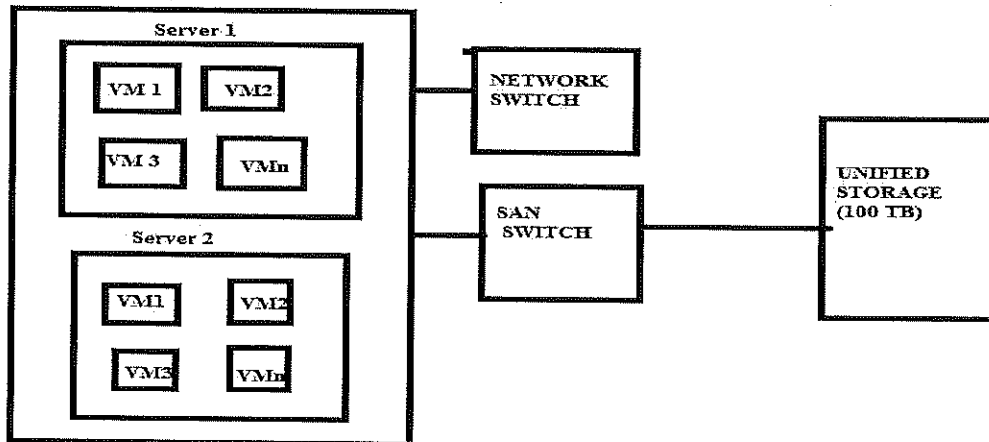
No.	General Specifications	
1	Fibre Channel Generation	32 Gbps
2	Switch Type	Fixed
3	Fibre Channel base ports	16
4	POD (port on demand) License	8 port
5	PODLicense Quantity	2
6	Scalability (ports)	24
7	Fibre Channel Port Speed (Gbps)	32

**d) Layer 2 – Access Switch (Qty. 2 Nos.)**

No.	General Specifications	
1	Type of switch	Managed
2	Technology	Non-PoE
3	Number of 1G Copper ports	At least 24
4	Number of 10 G SFP+ Port ( Uplink)	At Least 4
5	Management Port ( RJ 45/RS232/USB)	Yes
6	Redundant Power supply	Yes
7	Switching capacity (Gbps)	Min 128

*Handwritten signatures and initials:*  
 Arjun Anjan Kumar  
 [Signature]  
 [Signature]

e. **Block Diagram of Blade server and storage device**



B. **Central Data Receiving and Processing System Software**

I. **Metadata**

In order to meet the operational needs of continuously evolving, changing and expanding the station network with target count of 40000 stations, the CentralData receiving System database shall store the metadata of the stations and parameters.

The metadata module shall be compatible with WMO No. 1160 Manual on the WMO Integrated Global Observing System (WIGOS), 2015 Edition and shall be ready to accommodate changes/ amendments for future editions.

The metadata management shall be based on the concept of the properties of stations and parameters. The administrator of the CDRPS shall have the provision to define new properties/parameters.

The metadata module shall provide the web screens for the Management of Station Metadata including, but not limited to the following properties:

- a) Station name.
- b) District
- c) State
- d) ID (WMO, IMD, etc.)
- e) Geographical coordinates.
- f) The administrator of the Central Receiving station shall have the possibility to:
  - i) Add new station
  - ii) Delete station
  - iii) Disable and Enable the Station
  - iv) Modify the properties of the existing station

*Arjun Anjan Kumar*  
*Arjun Anjan Kumar*

- g) Parameter metadata, including, but not limited to the following properties:
  - i) Parameter name
  - ii) Unit of measurement
  - iii) Type chart
  - iv) Basic range
- h) The administrator of the CDRPS shall have the provision to:
  - i) Add new parameter
  - ii) Delete parameter
  - iii) Modify the properties of the existing parameter
- i) Individual Parameters measured at the station
- j) Beginning date of observation of particular meteorological element
- k) Ending date of observation.
- l) Observational schema: *Regular* or *Irregular*.
- m) Interval of observations in regular schema: 1 min, 15 min, 1 hour, 3 hours, 24 hours etc.
- n) The administrator of the CDRPS shall have the provision to modify the list of parameters measured at the particular station to match the configuration of the sensors at the station.

## II. Data Collection and System Management

The data collection module of the CDRPS software shall be capable of:

- a) receiving the data from existing systems ( satellite based TDMA)
- b) receiving the data via GPRS
- c) receiving the data via SMS
- d) receiving the data via TCP,FTP, Email
- e) data format checks of the incoming data telegrams
- f) the malformed telegrams shall be stored in the database for later manual inspection
- g) adding the configuration for the new formats of the CSV telegrams without the need for recompilation of the Central receiving System code by the administrator.
- h) data completeness checks and calculation of the data collection statistics (percentage of the missing data, etc.) using the metadata of the parameters measured at the station
- i) Notification of the missing / abnormal data (see quality control below) via e-mail / SMS
- j) Collection of the status information from stations (if reported by the particular type of the stations) and status data reporting. Notification in case the selected parameter (data or status value) crosses the value of the operational significance via e-mail / SMS (temperature out of range, battery voltage too low, etc.)

*Paul Anjia Anja* *Handwritten signature*  
*Handwritten signature*

### III. Quality Control and Data Processing

The CDRPS shall perform in real-time the quality control of the received data. In addition to the data format checks and data completeness tests mentioned in section II (Data Collection and System Management) above, following checks shall be implemented as minimum:

Data quality control has to be applied as real time QC performed at the Automatic Weather Station (AWS) and at Central Data Receiving and Processing System (CDRPS). In addition, it has to be performed as near real time and non-real time quality control at CDRPS.

There are two levels of the *real time* quality control of AWS data:

- (i) First level of quality check is at Agro AWS site in real time.
- (ii) Second level of quality check is at **CRDPS** in real time.
- (iii) Third level of quality check is at CDRPS in non-real time

### IV. Extended Quality Control Procedures (CRDPS) in real time

#### A. Statistical checks:

- a. *Range check*– the values of the parameter is higher or lower than prescribed thresholds.
- b. *Standard deviation check* – the standard deviation of variable over selected interval should be higher than the value specified in order to warn when e.g. sensor is stuck at a constant value, but naturally the value should variate over the time.

#### B. Spatial checks

- a. Comparison of the measured station value to the value calculated by objective analysis from the neighboring stations data.
- b. The analysis shall take into account geospatial predictors like elevation, coastal distance, slope steepness/orientation and others.
- c. For each station it shall be possible to define relevant surrounding stations, from which data are used to check suspected data at the station.

Spatial check involves comparing the data from a set of stations and determining the median of the values. The checked value should not differ from the median value by a certain percentage. The median is used instead of the mean so as not to allow a defective station to affect the validation checks of other stations. When performing this form of spatial checking, it is important that the set of stations chosen possess comparable characteristics. This is not just dependent on the location of the station and elevation, but can be influenced

*Atul Anjita Anjan Kumar*  
*W. Chyng*

by other physical factors (e.g. proximity to mountain range or the seaside) that may affect the prevailing weather conditions at the station. The suitability of station to form spatial check set with other stations needs to be determined on an element by element basis. For example, while a stations pressure reading may be comparable to another station, they may have different wind characteristics, and therefore should not be spatially checked for similarity in experience, by careful analysis of historical data

- V. The Central receiving system software shall support multi-layer quality flags. Each data value shall have several flags, depending on:
- a. Validation stage (checked, not yet checked)
  - b. Basic QC result (correct, warning, erroneous)
  - c. Detailed QC result (reference to rule that was violated by the value)
  - d. Data source (manned observation, automated climatologically station, etc. ...)
  - e. method (original value, manually corrected value, value calculated by system using physical equations, value manually forced)
- VI. The Central receiving system software shall have the tool for manual inspection of the values and their quality control flags, with possibility to edit the data and run quality control manually.
- VII. The data processing subsystem of the Central receiving system shall be able to calculate in real-time the derived parameters from the measured ones (for example dew point, QFE, QNH, interval minima, maxima, sums etc.).
- VIII. **Notification Module**  
The Central receiving system software shall contain notification module, which can send alerts via **email and/or SMS**. The module shall be integrated with the quality control module in order to enable triggering of the notifications by **any** QC issues – erroneous/suspicious data, missing data. (It can be also configured to react on other system statuses).  
Notification module shall generate and send system or data warnings to selected people. Notification module configuration shall enable to configure database of people to which some warnings should be sent, to specify warnings and conditions for their issuing as well as customize sending of warnings to people (in order to send specific warning to responsible person). Several groups of features shall be configurable:
- a) People - database of people to whom warnings should be sent.
  - b) System warnings – configuration of incidents and **threshold** when warning is invoked – for faulty communication (whole

*Paul Anjia Anja - Khandu*  
*Wolign*

messages are missing) and for faulty sensor (some individual parameters are missing).

- c) Data warnings - configuration of incidents and **threshold** when warning is invoked – for “reason” like data value is not within range, **value highest/lowest, value above 90<sup>th</sup> percentile**, other QC rules are broken, **more than x consecutive days of below yy mm average rainfall over specified stations**, high/low variation of element, time change, **AND/OR combinations** of rules are possible. The user can attach own names to the rules, like “air temperature zero”

- d) Send to – which alerts to be sent to whom

It shall be possible to configure text of SMS and e-mail. In the message body shall be possible to address the data / metadata values from database (e.g. %STATION% might represent the name from selected stations for which the alert threshold was broken). Sent message shall contain particular value of the parameter. In addition it shall be possible to set the behaviour of message repetition, in case the cause of the error was not immediately solved.

#### IX. Data Retrieval and Visualization

The Central receiving system software shall provide the user interactive query tool for ad-hoc selection / export of the data for the selected station(s), parameter(s), time interval, with aggregation functions (sum, average, min, max, extreme values) applied in the form of the table, chart, CSV, PDF, Excel format.

It shall be possible to view the SQL queries prepared by the interactive tool and copy/paste them for reuse.

It shall be possible to visualize the wind data over selected period in the form of wind roses with user configurable parameters.

#### X. Map Visualization

- i) The Central receiving system software shall provide the Open Geospatial web services.
- ii) The web services shall provide all types of station data as well as geo referenced data from other sources.
- iii) The system shall include the map server with the licensed maps of India (up to the street level) as per Govt. of India Guidelines. The map and the database shall be fully incorporated into the CDRPS in order to enable the full functionality without the need of the internet connection to the external map providers.
- iv) The proposed web server at IMD Pune shall be able to upload the updated map data into the map server to keep the maps up to date.

*Atul Anjil Anjan Kumar*  
*W. D. G. G. G.*

**XI. Product Generation**

- i) The CDRPS shall generate automatically, using the data which have passed the quality control, following products:
  - a) FM-12 SYNOP code - single message and / or bulletins
  - b) FM-14 SYNOP MOBILE code - single message and / or bulletins
  - c) FM-94 BUFR code - single message and / or bulletins
- ii) The administrator of the CDRPS shall have the provision to define:
  - a) the time schedule of the product generation,
  - b) Bulletins configuration – which stations shall be included in which bulletin.

**XII. Data Dissemination**

The CDRPS shall be able to disseminate the generated products / messages via multiple channels using various protocols:

- a) via FTP
- b) via E-mail
- c) via API

The message routing module shall enable user friendly definition of the routing rules for disseminating the generated codes via particular channels based on the WMO headers.

**XIII. User Management and Security**

The CDRPS web interface shall be accessible only to the authorized users authenticated by the username and password. The access to the respective modules of the CDRPS web interface shall be granted using the username / user role. The configuration of the users, passwords, roles, access rights shall be available to the authorized system administrator in the form of the web forms. Proper security has to be implemented to secure the system from outside worldattacks, hacking etc.

**XIV. Maintenance and Monitoring**

The CDRPS hardware and software shall include the modules and functionality allowing remote monitoring and management of the system, which shall include: The remote maintenance modules built into the CDRPS servers; the monitoring agent built into the CDRPS software and providing the software status data to the users:

- i) in the dedicated web page updated in real time
- ii) via SNMP to the standard SNMP based monitoring and management tools.

*Handwritten signatures:*  
 Anjil Anja  
 Veehgal



**XV. Product Generation for Agro AWS/AWS/ARG**

- (i) Generation of spatial maps for all the parameters.
- (ii) Daily, Weekly, Fortnightly, Monthly, Seasonal, Yearly Average Temperature, Pressure, wind, Rainfall, Relative Humidity, Soil Temperature, Soil moisture, Sun shine duration, Solar Energy etc.
- (iii) Additional parameter to be generated as per user requirement.

**XVI. Quality check of AWS/ARG/AGRO AWS at CDRPS in non-real time**

- a) Spatial check of each AWS/ARG/ AGRO AWS
- b) Check with station normal of each AWS/ARG/ AGRO AWS
- c) Climatology check of each AWS/ARG/ AGRO AWS

**XVII. Data Analysis report in real time and non-real time**

- a) It should provide the real time working status report and period performance report
- b) Daily working status with downtime details.
- c) Comparison report between daily statistics stations.
- d) Facility to download daily rainfall parameters for all AWS/ARG/Agro AWS.
- e) Facility to download daily soil sensors parameters for all AWS/ARG/Agro AWS
- f) Facility to download daily soil sensors parameters for all AWS/ARG/Agro AWS
- g) Facility to download individual meteorological parameter and agro parameter from server

(Note: The Technical specification of data receiving and processing system (both hardware and software) are the minimum requirement. However, the successful bidder will required to give the latest version of delivering the system without increasing the cost. Application software may require modification as per user requirement; the successful bidder has to do modification without additional cost during two years warranty and entire Comprehensive AMC period).

**14 COMPLIANCE STATEMENT**

The tenderer shall submit a detailed item-wise compliance/ non-compliance statement referring para-wise/sub-para wise to the requirements given in the document, for quick evaluation of tender and for any future reference. The compliance statement shall be supported by original brochure(s) of the equipment

*Atul Anjia Anjan* *Handwritten signature*  
*Handwritten signature*  
*Handwritten signature*

or sub component from the manufacturer. In case the original brochure is silent on any part of tender specification, it shall be supported by an undertaking by the manufacturer along with user certificate\* for that particular equipment/ sub- component, if claimed complied. The technical specifications and other requirements contained in this document are essentially required by the indenter. However, reasons for non-compliance, if any, for certain limited paras, or even sub-paras of the document may also be given by the tenderer. **Silence or inadequate information on any part of the technical specification, any conditional compliance or failure / omission to provide any such details will be treated as non-compliance.** All non-compliance of specifications, even of small nature, should be clearly brought out.

Sample format for Compliance (C)/ Non- Compliance (NC) statement:

Clause/Para/Sub-para no.	Item description as per IMD specification	Compliance (C)/ Non-Compliance (NC)	Remarks (if any)/ Supporting Documents (wherever required)
Chapter-1			
1	Introduction	Compliance/Partial Compliance /Non Compliance /Understood	
2	Language of Tender	Compliance/Partial Compliance /Non Compliance /Understood	
3			
Chapter-2			
1		Compliance/Partial Compliance /Non Compliance /Understood	
2			
3			
Chapter-3			

**15 ONSITE COMPREHENSIVE WARRANTY AND CAMC FOR AWS AND CDRPS, PUNE**

- a) The successful bidder shall provide onsite **comprehensive warranty for TWO YEARS** followed by **FIVE YEARS CAMC** of the entire system including site maintenance, consumables like Batteries, cells etc. after successful installation and commissioning. The firm has to enter into

*Anil Anjil Anja* *Handwritten signature*  
*Deligulo*

Agreement as per terms and conditions laid down by IMD during Comprehensive Warranty and CAMC period.

- b) The terms and conditions during on site Comprehensive Warranty Period /CAMC are given in detail as **Annexure -D** and **Annexure -E**.

#### 16 DELIVERY SCHEDULE

1.	Delivery and installation	<p>Delivery of all equipment and accessories shall be done at respective sites in four consignments from the date of issue of supply order.</p> <p><b>I<sup>st</sup> Consignment:</b> Installation, testing and commissioning of 30 Agro AWS System and Central Receiving Server with application software within Eight(8) months from the date of acceptance of supply order.</p> <p><b>II<sup>nd</sup> Consignment:</b> 100 Agro AWS System within four (4) months after delivery and installation of first consignment of 30 Agro AWS systems and CDRPS.</p> <p><b>III<sup>rd</sup> Consignment:</b> 100 Agro AWS System within four(4) months after delivery and installation of second consignment of 100 Agro AWS systems.</p> <p><b>IV<sup>th</sup> Consignment:</b> 100 Agro AWS System within four (4) months after delivery and installation of third consignment of 100 Agro AWS systems.</p>
	Commissioning of Agro AWS	<p>Within Twenty (20) months from the date of issue of supply order.</p> <p>The firm has to install and commission Server, application software and website and also first 30 Agro AWS system within Eight months.</p> <p>Remaining 300 Agro AWS has to be installed and commissioned within subsequent 12 months.</p> <p><b>The firm has to plan in such a way that the project should be taken on highest priority and complete the project within Twenty months.</b></p>

Delivery of one set equipment Agro AWS shall be done at each respective Agro AWS field sites and mentioned in Annexure - A and Reception Server with associated peripherals/ accessories at IMD, Pune.

*Arjun Anjil Anja* *Handwritten signature*  
*Handwritten signature*  
*Handwritten signature*

## 17. TRAINING

### 17.1 ONLINE TRAINING ON AGRO AWS TO IMD OFFICIALS

The successful bidder shall provide comprehensive training in installation, integration, calibration, operation, maintenance, troubleshooting and replacement of defective modules of proposed DAS, GPRS communication system, Sensors, DAS programming and system related topics to RMC wise for a minimum period of Two Working Days. ONLINE training on installation and maintenance of sensors, DAS, GPRS modem and Agro AWS and data downloading facility from DAS shall include officials from RMCs/MCs/AFMUs/KVKs. Training syllabus, material and documentation in English language shall be provided along with time table well before commencement of training for evaluation/ modification/ approval by IMD. Soft copy of finalized training material should be provided to all the trainees and consignee as well as SID Pune.

**Six ONLINE training will be conducted for SIX RMCs- Chennai, Delhi, Guwahati, Kolkata, Mumbai and Nagpur.**

**The bidder shall also provide One day onsite training to nodal officers designated by IMD for operation and routine maintenance ofentire installed system at each Agro AWS site. Soft copy of the trainingmaterial should be provided to all the trainees and consignee as well as SID Pune.**

### 17.2 TRAINING ON CENTRAL DATA RECEIVING SERVER AND PROCESSING SOFTWARE

- A. The successful bidder shall provide comprehensive training in installation, integration, operation, maintenance, troubleshooting and reinstallation of Application software, software and OS on servers, PC"s, network equipment with their configuration and system related topics including backup and restoration of the system.
- B. The successful bidder shall provide comprehensive training in installation, integration, operation, maintenance, troubleshooting and reinstallation of website, mobile APP and API with their configuration and system related topics including backup and restoration of the system.
- C. Training syllabus, material and documentation in English language shall be provided along with time table well before commencement of training for evaluation/ modification/ approval by IMD. Soft copy of finalized training material should be provided to all the trainees.
- D. **Physical training for 5 (Five) IMD officers for a minimum period of Five Working Days at IMD Pune.**

*Handwritten signatures and initials:*  
 Anjali Anjan  
 V. S. Srinivasan  
 V. S. Srinivasan

Annexure-ATENTATIVE LIST OF AGRO AWS SITESList of 330 to establish Agro AWS (200 at DAMUs and 130 at AMFUs)

S. No	STATE	No.	District	KVK /AMFUs Name
1.	Punjab	4	Amritsar	KVK Usman
2.			Hoshiarpur	KVK Mahilpur
3.			Patiala	KVK Post Box No.22
4.			Sangrur	KVK Kheri
5.	Uttarakhand	3	Chamoli	KVK Gwaldam
6.			Pittoragarh	KVK Jakhdar
7.			Almora	KVK Dhakrani
8.	Haryana	8	Ambala	KVK Vill- Tepla, PO Saha, Distt Ambala-133104 (Haryana)
9.			Bhiwani	KVK Near Bhim Stadium, Bhiwani-127021 (Haryana)
10.			Fatehabad	KVK Govt. Seed Farm, Fatehabad-125050 (Haryana)
11.			Jhajjar	KVK BeedSunarwala, 5 km stone, Jhajjar-Badli Road, Jhajjar-124103 (Haryana)
12.			Jind	KVK PanduPindara, Jind- 126102 (Haryana)
13.			Panipat	KVK Village -Ujaha, P.O.Risalu, Panipat-132104 (Haryana)
14.			Rewari	KVK Shri. B. B. Ashram, Rampura, Rewari-123401 (Haryana)
15.			Rohtak	KVK Near Jat Collage, Rohtak- 124001 (Haryana)
16.	Rajasthan	10	Ajmer	KVK N.H. No. 8, Tabiji Farm, Distt. Ajmer - 305001 (Rajasthan)
17.			Alwar-I	KVK Navgaon, Distt. Alwar - 301025 (Rajasthan)
18.			Barmer-II	KVK Gudamalani, Distt. Barmer- 344031 (Rajasthan)
19.			Bundi	KVK P.B. No. 4, Nainwa Road, Bundi, Distt.- Bundi- 323001 (Rajasthan)
20.			Jhalawar	KVK P.B. No. 16, Kota Road, JhalawarDistt.- Jhalawar- 326001 (Rajasthan)

*Atul Anjil Anjan Khanda*  
*10/01/2022*

21.			Pali	KVK Jodhpur Road, Pali-Marwar, -306 401 (Rajasthan)
20.			Jhalawar	KVK P.B. No. 16, Kota Road, Jhalawar Distt.- Jhalawar-326001 (Rajasthan)
21.			Pali	KVK Jodhpur Road, Pali-Marwar, -306 401 (Rajasthan)
22.			Rajsamand	KVK Dhoinda, Rajsamand, Distt. Rajsamand-313342 (Rajasthan)
23.			Dausa	KVK KhedaKhurd,, PO-Hingotia, Distt. Dausa-303303 (Rajasthan)
24.			SawaiMadhopur	KVK Karmoda, Distt. Sawaimadhopur- 322001 (Rajasthan)
25.			Tonk	KVK Banasthali Vidya Pith, Banasthali, Distt. Tonk- 385535 (Rajasthan)
26.	Uttar Pradesh	37	Agra	KVK R.B.S. College, Bichpuri
27.			Aligarh	KVK Central Dairy Farm Complex, Anoopshahar Rd
28.			Ambedkar	KVK Distt. Ambedkar Nagar
29.			Amethi	KVK Village & PO Kathora
30.			Banda	KVK Banda
31.			Bara Banki	KVK Haidargarh
32.			Bareilly	KVK IVRI, Izatnagar
33.			Basti	KVK Banjariaya Farm
34.			Bijnor	KVK Rice Research Station, Nagina
35.			Deoria	KVK village Malhana, Bhatpar Rani
36.			Etah	KVK R.B.S. College
37.			Etawah	KVK Dr. B.R. Ambedkar Agricultural Engineering College Farm
38.			Farrukhabad	KVK KrishiBhawan, Lakula
39.			Firozabad	KVK Hazaratpur
40.			Gautam Buddha Nagar	KVK, GautamBudhha Nagar, Bharsar
41.			Ghaziabad	KVK Behind Ordinance Factory, Muradnagar
42.			Hamirpur	KVK Govt. Agriculture Farm, Kurara

*Atul Anjia Anjan* *Handwritten signature*  
*Handwritten signature*

43.			<b>Jalaun</b>	KVK Govt. Agriculture Farm
44.			<b>Kanpur Dehat</b>	KVK Zonal Agricultural Research Station
45.			<b>Kasganj</b>	KVK Village RajkiyaKrishiPrakshetra
46.			<b>Kaushambi</b>	KVK MalakMoinuddin
47.			<b>Lalitpur</b>	KVK Govt. Agriculture Farm, KhiriaMisra
48.			<b>Lucknow</b>	KVK IISR
49.			<b>Mahoba</b>	KVK Zonal Agricultural Research Station, Belatal
50.			<b>Mahrajganj</b>	KVK Basuli
51.			<b>Mathura</b>	KVK Dairy Farm, Veterinary College
52.			<b>Mirzapur</b>	KVK Barakachha Farm
53.			<b>Moradabad</b>	KVK Rustamnagar, Bilari,
54.			<b>Muzaffarnagar</b>	KVK Baghara, Jalalpur
55.			<b>Pilibhit</b>	KVK Distt. Rural Development Institute
56.			<b>Rae Bareli</b>	KVK Rae Bareilly
57.			<b>Saharanpur</b>	KVK Numaish Camp, New Gopal Nagar
58.			<b>SantKabir Nagar</b>	KVK Distt. SantKabir Nagar
59.			<b>Sitapur-I</b>	KVK Amberpur
60.			<b>Budaun-I</b>	KVK Bara Pathar Farm
61.			<b>Hardoi-I</b>	KVK Tatyora
62.			<b>Unnao</b>	V.K.S. KrishiVigyan Kendra, VirandraNagar
63.	Bihar	21	<b>Arwal</b>	KVK KrishiVigyanKerndra, LodhipurAgriuculture Farm
64.			<b>Bhojpur</b>	KVK SCADA, PO. Ara

*Atul Anjia Anja Kumar*  
*Wadigul*

65.			<b>Buxar</b>	KVK Lalganj S.M. Farm
66.			<b>Darbhanga</b>	KVK Jale
67.			<b>Gopalganj</b>	KVK Distt. Gopalganj
68.			<b>Jehanabad</b>	KVK Seed Multiplication Farm
69.			<b>Kaimur</b>	KVK Adhura
70.			<b>Kishanganj</b>	KVK PO. Thakurganj
71.			<b>Lakhisarai</b>	KVK Seed Multiplication Farm, Halsi
72.			<b>Madhepura</b>	KVK Distt. Madhepura
73.			<b>Madhubani</b>	KVK S.K. Choudhary Educaitonal Trust, Basaith, Vill. Chandpura
74.			<b>Munger</b>	KVK PO. Shankarpur
75.			<b>Nalanda</b>	KVK Harnaut
76.			<b>Pashchimchamparan</b>	KVK Madhopur
77.			<b>Patna</b>	KVK Agwanpur, Barh
78.			<b>Rohtas</b>	KVK Bikramganj
79.			<b>Saran</b>	KVK Agricultural Farm, Manjhi

*Handwritten signature: Anjio Anjan Kumar*  
*Handwritten signature: [unclear]*  
*Handwritten signature: [unclear]*



80.			<b>Sheohar</b>	KVK C/O-Bal Narayan Singh Rani Pokhar, Back of Petrol Pump, Near Zero Mile
81.			<b>Siwan</b>	KVK Regional Research Station, Bhagabanpurhat
82.			<b>Supaul</b>	KVK Distt. Agricultural Farm Raghapur
83.			<b>Vaishali</b>	KVK Hariharpur, RajauliHajipur Farm,
84.	West Bengal	8	<b>Bankura</b>	KVK Bankura,
85.			<b>Barddhaman</b>	KVK Burdwan, ICAR-Central Research Inst. For Jute & Allied Fibre, Budbud, Dist. Burdwan
86.			<b>Howrah</b>	KVK Howrah, BCKV,
87.			<b>Hooghly</b>	KVK Hooghly, BCKV, RRS Campus, Chinsurah, Dist. Hooghly
88.			<b>Jhargram</b>	KVK Jhargram, Sevabharati, Kapgari
89.			<b>Kalimpong</b>	KVK Kalimpong, UBKV-RRS Campus, Dist. Kalimpong
90.			<b>Purbamedinipur</b>	KVK PurbaMedinipur, Dayaldasi, Nandakumar, Dist. PurbaMedinipur
91.			<b>Uttar Dinajpur</b>	KVK Uttar Dinajpur , UBKV, Chopra,
92.	Arunachal Pradesh	4	<b>Anjaw</b>	KVK Metengliang Village
93.			<b>Changlang</b>	KVK Jairampur
94.			<b>Tawang</b>	KVK Tawang
95.			<b>Longding</b>	KVK Niaunu
96.	Assam	13	<b>Biswanath</b>	College of Agriculture

*Atul Anjia Anjan Kumar*  
*Wahid*

97.			Bongaigaon	KVK Bongaigaon
98.			Chirang	
99.			Dibrugarh	KVK Romai village
100.			DimaHasao	KVK Village Sarvagram
101.			Golaghat	KVK Khumtai
102.			Kamrup	KVK Kamrup, Kahikuchi, Guwahati
103.			Lakhimpur	KVK RARS, North Lakhimpur
104.			Morigaon	KVK Morigaon
105.			Nalbari	KVK Sariahtoli
106.			Sivasagar	
107.			Tinsukia	KVK Citrus Research Station, Gellapukhuri
108.			East-Karbi-Anglong	KVK KARBI-ANGLONG
109.	Sikkim	2	North Sikkim	KVK Tadong, Gangtok
110.			South Sikkim	KVK Namthang
111.	Manipur	2	Thoubal	Dept. of Agriculture, Govt. of Manipur
112.			Churachandpur	ICAR RC for NEH Region, Umiam
113.	Meghalaya	2	East Khasi Hills	Dept. of Agriculture, Govt. of Meghalaya
114.			Jaintia Hills	Dept. of Agriculture, Govt. of Meghalaya
115.	Mizoram	2	Champhai	Dept. of Agriculture, Govt. of Mizoram
116.			Lawngtlai	Dept. of Agriculture, Govt. of Mizoram
117.	Nagaland	2	Zunheboto	Nagaland University
118.			Tuensang	Dept. of Agriculture, Govt. of Nagaland
119.	Tripura	2	North Tripura	Dept. of Agriculture, Govt. of Tripura
120.			South Tripura	ICAR RC for NEH Region, Umiam
121.	Maharashtra	11	Dhule	

*Atul Anjan Anjan Anjan Anjan*  
*Dehgan*

122.			Raigadh	
123.			Beed-I	
124.			Gondia	
125.			Amaravati- II	
126.			Jalgaon-II	
127.			Jalna	
128.			Latur-I	
129.			Nanded-I	
130.			Satara-II	
131.			Yavatmal-I	
132.	Gujarat	2	Kheda	KVK Kheda
133.			Tapi	KVK Tapi
134.	Chhattisgarh	14	Balod	KVK Block- Balod, Araud, Dist.- Balod
135.			Balrampur	KVK Village, Jaber, Balrampur Tehsil, Distt. Surguja
136.			Bemetara	KVK Village Jhal
137.			Bilaspur	KVK Sarkanda Farm
138.			Dhamtari	KVK Polytechnic Campus, RUDRI
139.			Durg	KVK P.Box. No. 6, Anjora
140.			Gariaband	KVK Kokdi, Gariyaband Block
141.			Janjgir- Champa	KVK Near district Panchayat, Janjgir
142.			Kabeerdham (Kawardha)	KVK Newari Farm
143.			Kondagaon	KVK Vill.- Borgaon, Kondagaon
144.			Mungeli	KVK Village Gidhpuri&Chatarkhar
145.			Raigarh	KVK Distt. Raigarh
146.			Sukma	KVK Vill.- Murtunda, Sukma
147.			Surajpur	KVK Ajirma, P.O.- Rohsanpuri, Ambikapur
148.	Madhya Pradesh	17	Anuppur	JNKVV
149.			Bhind	
150.			Burhanpur	KVK ShankarpuraKhurd and SandasKhurd
151.			Datia	KVK Village Hamirpur
152.			Dindori	KVK Tribal Agricultural Research Station

*Atul Anjira Anjan Khanda*  
*Co-ordinator*

153.			Gwalior	
154.			Harda	KVK Distt. Harda
155.			Mandla	KVK C/o S.K. Tripathi House No.207, Near Subha Motor, Katla
156.			Narsimhapur	KVK ShashtriBhawan, Station Gunj Area
157.			Panna	KVK Laxmipur
158.			Raisen	KVK Near Village Naktara, PO.Bankheddi
159.			Sagar	KVK Zonal Agriculture Research Station, Bamhori
160.			Satna	KVK Majhgaon
161.			Seoni	KVK Block Office Compound
162.			Sheopur	
163.			Umaria	KVK Vill. Darbroha
164.			Betul	KVK Betul
165.	Tamil Nadu	13	Ariyalur	KVK Ariyalur
166.			Thiruppur	KVK, Thiruppur (TNAU)
167.			Erode	KVK, Erode (Myrada)
168.			Karur	KVK, Karur
169.			Krishnagiri	KVK Mallinayanapalli, Krishnagiri
170.			Madurai	KVK , Madurai (TNAU)
171.			Nagappattinam	KVK Sikkal, Nagapattinam
172.			Perambalur	KVK Valikandapuram, Perambalur
173.			Sivaganga	KVK Kundrakudi, Sivagangai
174.			Thiruvarur	KVK Needamangalam, Thiruvaru (TNAU)
175.			Tenkasi	KVK, Tenkasi,
176.			Tiruvannamalai	KVK Kilnelli Village, Tiruvannamalai
177.			Viluppuram	KVK ,Tindivanam, Villuppuram
178.	Telangana	9	Badradri	KVK, Kothagudem
179.			Mahabubnagar	KVK, Kothakota ( YFA), Wanaparathi
180.			Mancherial	KVK, Bellampalli, Mancherial
181.			Medak	KVK , Tuniki, Medak
182.			Nagarkurnool	KVK, Palem, Nagarkurnool
183.			Peddapalli	KVK, Ramgirikila (KLBHU),

*Handwritten signatures and text:*  
 Anjil Anjan Kumar  
 Voligala

				Peddapalli
184			Warangal (Urban)	KVK, Mamnoor, Warangal Urban
185			Suryapet	KVK Gaddipalli, Suryapet
186			Karimnagar	KVK, Jammikunta, Karimnagar
187.	Karnataka	8	Gadag	KVK Hulkoti- NGO KVK
188.			Belgaum	KVK Belagavi-I, Tukkanatti, Taluk Gokak
189.			Chikkaballapura	KVK Chikkaballapu, ARS Chintamani, P.B.No-29, Chintamani
190.			Dakshina Kannada	KVK Dakshana Kannada, College of Fisheries, Kankanady, Mangalore
191.			Davanagere	KVK Davanagere, Kadalivana, LIC Colony layout, Davanagere
192.			Kalaburagi	KVK Kalaburagi-II, Village- Raddewadgi, TalukJewargi
193.			Hassan	KVK Hassan, Kandali,
194.			Bengaluru Rural	KVK BRD, Hadonahalli, DoddaballapurTaluk, UAS-B KVK
195.	Kerala	5	Alappuzha	KVK Alappuzha, Krishnapuram Post, Kayangulam
196.			Ernakulam	KVK Ernakulam, Kasthurbanagar, Kadavanthara Post
197.			Idukki	KVK Idukki, Santhanpara Post.
198.			Kannur	KVK Kannur, Panniyur, Kanhirangad Post, Taliparamba,
199.			Pathanamthitta	KVK Pathanamthitta, Kolabhagon Post, Thadiyoor, Tiruvalla

*Atul Anjia Anjan*  
*Udignul*

200.	Andhra Pradesh	5	Visakhapatnam	Anakapalle
201.			Anantpur	Anantpur
202.			Guntur	Lam (Guntur)
203.			Chittoor	Tirupati
204.			Visakhapatnam	Chintapalli
205.	Telangana	2	Hyderabad	Rangareddy
206.			Jagtiyal	Karimnagar
207.	Assam	6	Karbianglong	Diphu
208.			Jorhat	Jorhat
209.			Karimganj	Karimganj
210.			Nagaon	Shillongani
211.			Sonitpur	Sonitpur
212.			Kokrajhar	Gossiagon
213.	NEH	6	East Khasi Hills	Barapani
214.			Dimapur	Jharanapani
215.			Kolasib	Kolasib
216.			Imphal West	Lamphelpat
217.			Agartala	Lembuchera
218.			West Siang	Basar
219.	Bihar	3	Patna	Agwanpur
220.			Samastipur	Pusa
221.			Bhagalpur	Sabour
222.	Chhattisgarh	3	Surguja	Ambikapur
223.			Bastar	Jagadapur
224.			Raipur	Raipur
225.	Gujarat	8	Anand	Anand
226.			Ahmedabad	Arnej
227.			Kutch	Bhachau
228.			Banaskantha	Dantiwada
229.			Junagadh	Junagadh
230.			Bharuch	Maktampur
231.			Navasari	Navasari
232.			Rajkot	Targhadia

Atul Anjia Anjan Kumbh  
 (Signature)

233.	Haryana	2	Hissar	Hissar
234.			Kaithal	Kaul
235.	Himachal Pradesh	4	Palampur	Palampur
236.			Kullu	Seobagh
237.			Sirmaur	Sirmaur
238.			Lahaul&Spiti	Kukumseri
239.	Jharkhand	3	Darsai	Singhum East
240.			Dumka	Dumka
241.			Ranchi	Ranchi
242.	J & K	5	Kupwara	Kupwara
243.			Baramulla	Baramulla
244.			Leh	Leh
245.			Rajouri	Rajouri
246.			Srinagar	Srinagar
247.	Karnataka	10	Bangalore	Bangalore
248.			Bidar	Bidar
249.			Bijapur	Bijapur
250.			Udupi	Brahamavar
251.			Dharwad	Dharwad
252.			Chitradurga	Hiriyur
253.			Mysore	Naganhalli
254.			Shimoga	Naveli
255.			Raichur	Raichur
256.			Wayanad	Ambalayal
257.	Kerala	5	Wayanad	Ambalayal
258.			Kottayam	Kumarakom
259.			Pillicode	Pillicode
260.			Trissur	Trissur
261.			Uttara Kannada	Sirsi
262.	Maharashtra	9	Akola	Akola
263.			Ratnagiri	Dapoli
264.			Nasik	Igatpuri
265.			Kolhapur	Kolhapur
266.			Sindhudurg	Mulde
267.			Parbhani	Parbhani
268.			Pune	Pune
269.			Rahuri	Rahuri
270.			Chandrapur	Shindewahi
271.	Madhya Pradesh	9	Chhindawara	Chhindawara




*Atul Anjil Anjan*  
*Atul*

272.			Indore	Indore
273.			Jabalpur	Jabalpur
274.			Jhabua	Jhabua
275.			Khargone	Khargone
276.			Morena	Morena
277.			Sehore	Sehore
278.			Hoshangabad	Powerkheda
279.			Tikamgarh	Tikamgarh
280.	New Delhi	1	New Delhi	New Delhi
281.	Orissa	10	Kalahandi	Bhawanipatna
282.			Bhubaneswar	Bhubaneswar
283.			Sambalpur	Chiplima
284.			Kandhamal	G.Udaigiri
285.			Sundergarh	Keirei
286.			Keonjhar	Keonjhar
287.			Dhenkal	Mahisapat
288.			Malkangiri	Malkangiri
289.			Bhadrak	Ranital
290.			Koraput	Semiliguda
291.	Punjab	5	Bhatinda	Bhatinda
292.			Nawanshahar	Ballowal
293.			Faridkot	Faridkot
294.			Gurudaspur	Gurudaspur
295.			Ludhiana	Ludhiana
296.	Rajasthan	9	Bikaner	Bikaner
297.			Bharatpur	Bharatpur (Sewar)
298.			Jaipur	Jaipur (Durgapura)
299.			Jodhpur	Jodhpur (CAZRI)
300.			Kota	Kota
301.			Sriganganagar	Sriganganagar
302.			Udaipur(CTAE)	Udaipur(CTAE)
303.			Sikar	Faitehpur
304.			Banswara	Banswara
305.	Tamilnadu	8	Aduthurai	Aduthurai
306.			Chennai	Chennai
307.			Coimbatore	Coimbatore
308.			Dindigul	Kanniwadi
309.			Thoothukudi	Kovilpatti
310.			Namakkal	Namakkal
311.			Nilgiris	Ooty

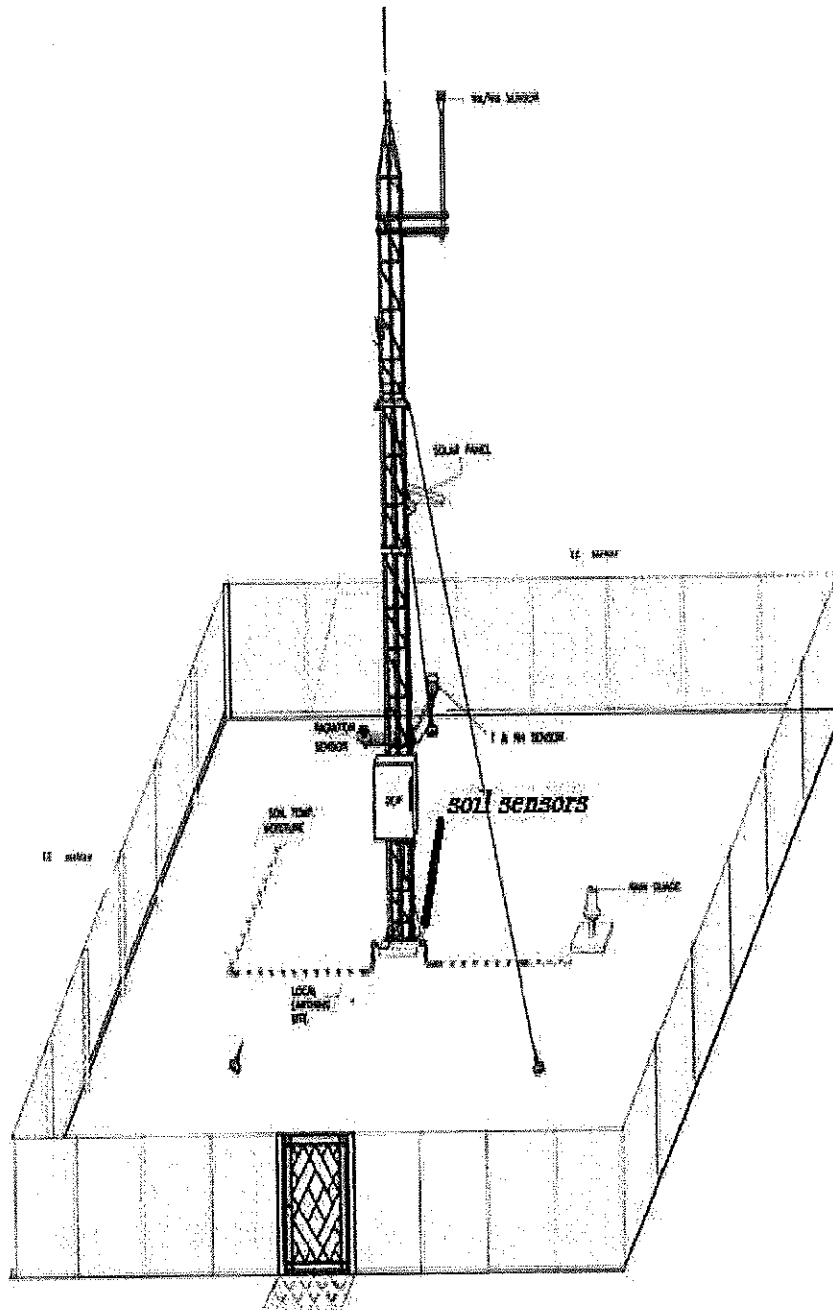
*Anil Anjil Anjar*  
*Udaipur*



312.			Kanyakumari	Pechiparai
313.	Puducherry	1	Karaikal	Karaikal
314.	Uttar Pradesh	7	Allahabad	Allahabad
315.			Bharaich	Bharaich
316.			Jhansi	Bharari
317.			Faizabad	Faizabad
318.			Kanpur	Kanpur
319.			Meerut	Modipuram
320.			Varanasi	Varanasi
321.	Uttarakhand	3	USNagar	Pantnagar
322.			TehriGarhwal	Ranichauri
323.			Haridwar	Roorkee
324.	West Bengal	6	Darjeeling	Kalimpong
325.			Kalyani	Kalyani
326.			P- Medinipur	Kharagpur
327.			S24Parganas	Kakdweep
328.			DakshinDinajpur	Majhian
329.			Cooch Behar	Pundibari
330.	Andaman & Nicobar	1	Andaman & Nicobar	Andaman

Annexure -B



*Atul Anjio Anjan Khandu*  
*Uchigub*

Annexure –C**DETAILS OF AGRO AWS SITE PREPARATION****1. AGRO AWS SITE**

Area of the AWS site should be 10 m x 10 m. The site should be leveled and made free of obstacles like bushes and trees. Herbicide should be sprayed and sites should be cleaned.

**2. Fencing for the AWS site with Gate**

- (a) The height of the fencing for the AWS site (10 m X 10 m) must be 1.5 meters from the ground level.
- (b) Fencing angle should be of size 50mm x 50mm x 6mm and pre-coated with red-oxide. Length of the angle shall be 2.5 meters i.e. (0.5 m below ground level). Each angle shall be grouted in concrete blocks of size (0.5 m X 0.5 m X 0.5 m). Angle iron should be painted with 2 coating of synthetic enamel paint.
- (c) Two MS angles must be used diagonally at each of the four corner angles of the site.
- (d) Distance between each fencing angle should be not more than 2 m.
- (e) **Chainlink Fencing**
  - (i) Dimensions of GI Chain link: 10 cm x 10 cm and of Gauge: 10 (3 mm diameter).
  - (ii) GI chainlink mesh must be stretched on the fencing angles.
- (f) Gate: Entry Gate of Dimensions: 2mx1m x6 mm (Length x Width x Thickness) of MS angle with locking facility and painted with white/ silver colour.

**3. Mast Specification for AWS site**

- a) The mast shall be 10 m height and tiltable which is made of anodized Aluminum alloy suitable for coastal stations.
- b) Three stainless steel guy wires (rust proof) support is to be provided for the mast.
- c) The mast shall be painted in red and white colour scheme.
- d) It should be possible to easily tilt down the mast by one person for equipment installation and maintenance.
- e) The mast shall survive high wind speed of 60 m/s and **test certificate shall be provided along with the technical bid.**
- f) Concrete Platform for the mast should be 2.0 ft x 2 ft (length x width) and 4 ft height (3.0 ft below ground level and 1.0 ft. above the ground level). All concrete shall be in ratio of 1:1<sup>1/2</sup>:3 and well compacted after being laid.

**4. Rain Gauge foundation**

The Rain gauge foundation must be of dimensions 1 ft x 1ft (length x width) and 2ft height (1.0 ft below ground level and 1.0 ft above the ground level).

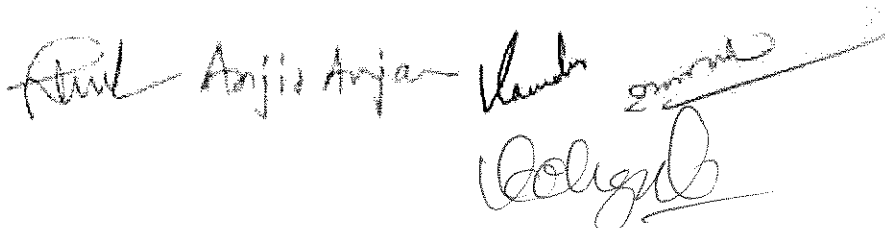
*Atul Anjil Anjan Kumar*  
*Udayakumar*

### 5. Earthing for signal ground and Lightning Arrestor

- (a) All Agro AWS stations shall be provided with 2 earth pits - one for signal earth, another for lightning arrestor.
- (b) AWS DAS enclosure should be grounded with local earthing.
- (c) The earth pits shall ensure 100 % protection for all sensors and systems from severe lightning.
- (d) The lightning arrestor rod shall be made of copper which mounted on the top most of the AWS tower. It should be of thickness 12 mm and of one-meter length with a connected copper wire of dimension 15-meter length and 6 mm thickness (gauge). At other end of the copper wire is earthing rod of dimensions 15 mm thickness and 1.8m length, which is about 1.8 m deep buried into the ground. On the bottom of earthing rod, one copper plate of dimension (30 cm X 30 cm X 3 mm) should be connected.
- (e) **Material required:**  
Salt: 20 Kg; Charcoal: 20 Kg; Sand: 100 kg
- (f) Two separate pits are required – one for earthing ground and one for lightning arrestor.
- (g) **Procedure:**
  - (i) A Pit of 150 cm feet depth, 60cm X 60 cm wide at bottom (like a cone shaped) has to be dug.
  - (ii) After levelling the bottom pit, uniform layer of sequence of 15 cm of salt + 15 cm, charcoal 15 cm sand is filled. Such sequence is repeated 3 times till the earth pit is filled at the top. The copper earthing rod is placed in the centre of the pit at 150 cm depth. The pit is closed and levelled.

### 6. Sensor Installation

- (a) Temperature and Humidity sensor will be installed at a height of 2 m and sensor is kept at North Direction and should be kept at distance from tower by 1m.
- (b) One Wind sensor will be installed at a height of 10 m and another wind sensor will be installed at 3 m height.
- (c) Pressure sensor will kept inside the enclosure.
- (d) Rain gauge sensor will be installed at distance of 3 meters from the tower.
- (e) Pyranometer sensor will be installed at 2m height in north direction.
- (f) PAR sensor will be installed at 2 m height in north direction
- (g) Soil temperature sensors will be installed at (10 cm, 30 cm, 70 cm and 100 cm) defined depth.
- (h) Soil Moisture sensors will be installed at (10 cm, 30 cm, 70 cm and 100 cm) defined depth. It is to be calibrated as per soil of installed site. Data is to be validated.



Annexure - D

**TERMS AND CONDITIONS DURING TWO YEARS ONSITE  
COMPREHENSIVE WARRANTY AND FIVE YEARS  
COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT**

1. The successful bidder shall provide onsite Comprehensive Warranty for two Year followed by Comprehensive AMC for Five Years of all Agro AWS. The warranty period shall start from date of successful commissioning of the system. After expiry of two years Warranty, IMD will sign an agreement with the firm for Comprehensive AMC of entire Agro AWS for Five years.
2. The CAMC shall be awarded to the firm on the basis of satisfactory maintenance during two years warranty period. The CAMC will be reviewed every year for the firm's performance regarding maintenance of Agro AWS. If the firm was unable to carry out the maintenance work during warranty and CAMC as per IMD's Terms and Conditions then the IMD shall be free to terminate the CAMC with one-month notice and the firm may be blacklisted to participate in any IMD's tender for next FIVE years.
3. IMD will appoint a nodal officer at Agro AWS sites of respective ZIMCs/MCs and RMCs. During comprehensive warranty/CAMC period, the Nodal Officer at Agro AWS site will authenticate the preventive maintenance /maintenance and data quality done by the Successful Bidder. The bidder's engineer/representative must associate the respective nodal officer during any visit/maintenance etc. at each site who shall verify all the inventory of installed items before starting the maintenance work and while leaving Engineer/representative from site after its completion during each visit. A separate register/logbook should be maintained with the respective nodal officers. The format of log book entry will be given during commissioning of Agro AWS.
4. The bidder shall undertake work of servicing and routine Preventive Maintenance (PM) of Agro AWS sites once in **every three months**. The PM shall include grass cutting, spraying of herbicide, cleaning of solar panel, rain gauge and general upkeep of site, **ensure the data quality** and retrieval of logged data from the system. However, painting of mast, fencing and gate shall be done on yearly basis. A penalty of Rs 20,000/= persite per three months will be imposed in case of failure to do the routine preventive maintenance and other related works mentioned above. This penalty will be deducted from their Performance Security deposit/CAMC Charges.
5. The bidder has to ensure that the grasses and bushes should be cleaned regularly at Agro AWS site and none of the site should have grass/bushes height around nine inches above ground level. It is to be ensured by the nodal officer of the sites by sending the monthly report along with photograph of the sites to AASD, DELHI and SID, PUNE. If the Agro AWS site is not cleaned as desired during inspection, a penalty of Rs 5000/-per site will be imposed as part of general upkeep of site and will be deducted from their Performance Security deposit/CAMC Charges.
6. Reports of PM visits should be submitted on a quarterly basis certified by the respective Nodal officer to coordinating Agromet offices at New Delhi

*Abdul Anjia Anjan Khush*  
*Deelip*

7. Reports of PM visits should be submitted on a quarterly basis certified by the respective Nodal officer to coordinating Agromet offices at New Delhi /Pune.
8. Agro AWS will be considered as non-functional during onsite Comprehensive Warranty/CAMC periods:
  - a) **Even if a single sensor or any component/unit becomes faulty.**
  - b) **In case of non-receipt of data even from a single sensor.**
  - c) **If data reception of any Agro AWS at Central receiving system is less than 90 % on daily basis.**
9. In case Agro AWS system lies in Plain Areas, if down time is more than **Two days, (after reporting complaint).** penalty at the rate of 0.5% (of CAMC value) per day **per Agro AWS shall be imposed on the bidder.** This penalty will start from third day (of reporting complaint) and shall be deducted from their Performance Security deposit/CAMC Charges. The maximum penalty shall be limited to 10% of CAMC per site.
10. If the AWS system lies in Jammu & Kashmir, Himalaya region and North East India; in case the down time is more than **Five days,** penalty at the rate of 0.5% (of CAMC value) per day **per Agro AWS shall be imposed on the bidder.** This penalty will start from sixth day (of reporting complaint) and shall be deducted from their Performance Security deposit/CAMC Charges. The maximum penalty shall be limited to 10% of CAMC per site.
11. It is mandatory to replace SMF battery every two years or earlier if required at each Agro AWS site after commissioning of the system.
12. Reports of maintenance visits along with data retrieved from field AWS and date and time stamped photographs from at least four different angles of site, pre- and post-maintenance, shall be submitted to respective Nodal officers immediately. **The bidder shall also provide the details, reasons and remedial actions for defects to Nodal officers of Agro AWS site and Agromet coordinating offices at New Delhi /Pune.**
13. If the bidder does not rectify the fault for more than 15 days then IMD reserves the right to get the system rectified from any outside agency. The charges incurred shall be deducted from CAMC charges of the firm.
14. It is the responsibility of the bidder to ensure that all Agro AWS are in working condition during comprehensive warranty and CAMC periods.
15. **The bidder must be equipped with suitable travelling standards kits as per WMO guidelines.**
16. **The bidder has to carry out inter-comparison of the AGRO AWS data with travelling standard during preventative as well as corrective maintenance.**
17. **The travelling standard kits to be calibrated with IMD standards at SID, Pune on yearly basis.**
18. **The supplier has to carry out inter-comparison of the AGRO AWS data with travelling standard during preventative maintenance / corrective maintenance.**

19. The soil sensors have to be calibrated as per OEM guidelines.
20. The Pyranometer and PAR sensors have to be calibrated in every two years.
21. The details of specifications for accuracy of travelling standards kit are given below:

#### E. Wind speed

No	Sensor description/characteristics	Specifications
a)	Measurement range (for calibration)	0 to 60 mps
b)	Accuracy	2 % of full range
c)	Type of sensor	Moving type or ultrasonic
d)	Response time	< 1 second

#### F. Relative Humidity

No	Sensor description/characteristics	Specifications
a)	Measurement range	0 ... 100 %RH
b)	Type of sensor	Solid State Capacitive
c)	Accuracy	± 2%RH (0 ... 90 %RH) or better ± 3%RH (90 ... 100 %RH) or better
d)	Response time	<60 seconds

#### G. Temperature

No	Sensor description/characteristics	Specifications
a)	Sensor range	-40 °C to +60 °C
b)	Measurement range (for calibration)	-10 °C to +40 °C
c)	Accuracy	at +20 °C shall be ± 0.15 °C or better Over temperature range of -10 °C to +20 °C shall be ± 0.2 °C or better Over temperature range of +20 °C to + 40 °C shall be ± 0.18 °C or better
d)	Type of sensor	Pt100 RTD
e)	Response time	<40 seconds

#### H. Rainfall

The TBRG Calibrator should be used to perform the calibration. It works with the tipping bucket rain gauge with the superiority on reliable calibration and easy field check.


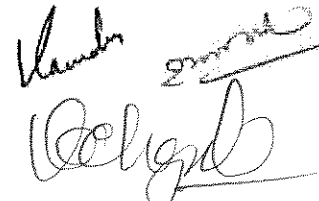
- a) Specifications: Bottle 114 mm (H) x Diameter 102mm

*Atul Anjli Anja*  
*Handwritten signatures*

- b) Cylinder: 120mm (L) with dispenser and shutter
- c) Support: 210cm (L) x 60cm (W)
- d) Material: PP for bottle and cylinder Stainless for handle and support plate
- e) Flow rate: Around 50mm/hr, 150mm/hr and 300mm/hr handle switch
- f) Volume: 785ml water for 200mm diameter gauge with 0.5mm/tip, yield desired tips.

#### I. Calibration

No	Feature	Requirement
a)	Calibration traceability	The calibration of the Soil sensors, Relative Humidity and Temperature, wind speed and rainfall shall be traceable to NIST or any other World recognized Institute.
b)	Post calibration of the kit through secondary standard.	<ul style="list-style-type: none"> <li>• The travelling standards after the use in the field need to be recalibrated/ checked and adjusted with secondary standards available in IMD.</li> <li>• The supplied equipment shall have facility to recalibrate them and add/ store the adjustments, if required.</li> <li>• The pressure sensor shall have the capability for Linear and multi-point adjustments whereas temperature and humidity sensor shall have the facility for linear adjustments.</li> <li>• The successful bidder needs to demonstrate the calibration procedure during the acceptance of the equipment.</li> <li>• <b>The calibration procedure complying with the above requirement shall be submitted along with the technical bid. This is a mandatory requirement for the calibration kit.</b></li> </ul>

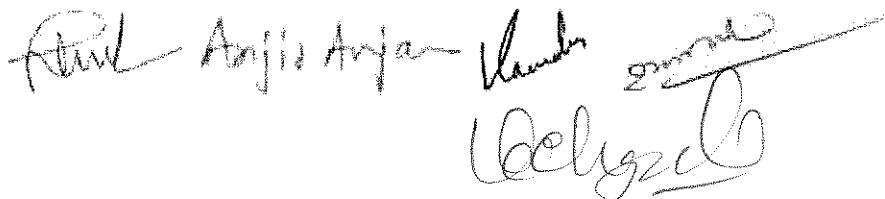





Annexure - E

**TERMS AND CONDITIONS DURING TWO YEARS ONSITE  
COMPREHENSIVE WARRANTY AND FIVE YEARS  
COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT  
FOR  
CENTRAL DATA RECEIVING AND PROCESSING SYSTEM, AWS  
WEBSITE, MOBILE APP AND API AT IMD PUNE**

1. The successful bidder shall provide onsite Comprehensive Warranty for Three Years followed by Comprehensive CAMC for Five Years of all AWS. The warranty period shall start from date of successful commissioning of the system. After expiry of two years Warranty; IMD will sign an agreement with the firm for Comprehensive CAMC of entire Agro AWS for Five years.
2. The Bidder shall maintain all the system on 24 HRS x7days (Round the clock).
3. **The bidder should have facility run the server in Virtual Machine (VM), backup and restore facility of virtual Servers, OS, Software Applications, website, mobile APP, API and associated peripherals.**
4. The bidder should be ready to accommodate required changes, upgrades and updates etc. in software in order to fulfill the requirement of WMO during Warranty and CAMC period free of charge. Such modifications should be done within stipulated period to meet the WMO objective and time line.
5. Bidder should provide the details of its call center/ helpdesk/ web portal meant for booking the complaints round the clock along with the contact numbers like mobile nos., phone nos., e-mail address and names etc. of its service Engineers available on 24 hrs service. Escalation matrix containing such information should also be submitted for the purpose to be used in case the fault is not rectified within stipulated period.
6. If there is complete failure of **Central Data Receiving and Processing System , AGRO AWS website , Mobile APP and API** for more than 6 hours due to failure of any of the hardware /networking equipment/ interconnecting links then the penalty shall be recovered for their unserviceable period at the rate of 0.25% per day for the unserviceable period from the amount of CAMC Charges of the CDRPS , website (unserviceable), Mobile APP, API / the Performance Security deposit subject to ceiling of 10% of the CAMC charges per quarter till the restoration of the system and operation.
7. If any of the standby machines fails without affecting the operation of the Central Receiving System, then it should be repaired within 2 days. If it fails to rectify the fault within the above mentioned period, a penalty shall be recovered from the amount of Performance Security deposit /CAMC for the unserviceable period at the rate of 0.25% per day of the amount of the Performance Security deposit



/CAMC charges of the device failed till its repair subject to ceiling of 10% of Performance Security deposit /CAMC charges per quarter till the rectification of the device.

8. If the Bidder is not able to rectify the fault within 48 hrs, in case of complete failure and 7 days in case of failure of standby systems /machines, then IMD may get the system rectified from any external agency and whole replacement /repair cost will be borne by the bidder only and shall be deducted from CAMC charges / Performance Security deposit..
9. External factors and severe natural calamity beyond human control shall be exempted from the penalty clause.
10. DGM, IMD, and New Delhi reserve the right to terminate the maintenance contract any time with prior notice of one month to the firm in the event of not fulfilling the terms and conditions, unsatisfactory performance etc.

#### 11. Response Time:

- a) To keep the response time minimum, the maintenance engineer should be available within 6 hours of reporting of fault beyond office hours.
- b) In case of complete failure of CDRPS operation and website, the fault shall be rectified within 6 hours after reporting.
- c) Bidder will provide Resident Engineers by 24 HRS X 7 DAYS during Two years comprehensive Warranty period and 5 years CAMC period. They should have SW background and should be available on all the days from 0000 HRS to 2300 HRS (Monday to Sunday including Holidays). They should be capable of handling the system including OS, application software, website, mobile app, API and its backup and restoration, The engineers should be equipped with mobile phones to ensure their availability.
- d) The firm has to submit the list of engineers to **be deployed at IMD Pune with their qualification, experience and contact details**. The firm has to update the same immediately on change about the service engineer so that fresh entry pass can be issued by IMD on return of the existing pass.
- e) If a Service Engineer remains absent or on leave without providing substitute, the penalty will be imposed at the rate of 0.25% per day from the amount of the Performance Security deposit /CAMC Charges of the Central Receiving Station and AGRO AWS website subject to ceiling of 10% of the CAMC charges.

#### 12. Service Window

The Service Window for onsite warranty and Comprehensive AMC support at IMD is required as under:

*Handwritten signatures and initials:*  
 Anil Anjan Kumar  
 (Signature)  
 (Signature)

**13. Service Window**

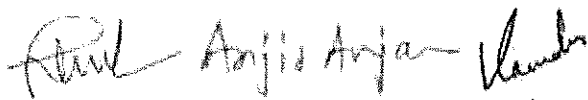

The Service Window for onsite warranty and Comprehensive AMC support at IMD is required as under:

Location	Days	Service Timings	Mode of Delivery
IMD Pune	24 HRS x 365 Days	(0000 to 2300 HRS	Resident Engineer

*Paul Anjio Anjan*  
*Handwritten signature*

Annexure-FLIST OF DELIVERABLES



S. No.	Item	Make & model Country of origin*	Qty. Nos.
1	2	3	4
	<b>Sensors and hardware for Agro AWS site</b>		
1.	Temperature Humidity Sensor with Radiation Shield and mounting accessories (Calibration certificate of all sensors with validity certificate is required)		330
2.	Pressure Sensor and mounting accessories (Calibration certificate of all sensors with validity certificate is required)		330
3.	Ultrasonic Wind sensors with mounting accessories (Calibration certificate of all sensors with validity certificate is required)		660
4.	Rain Gauge Sensor (TBRG) with mounting accessories (Calibration certificate of all sensors with validity certificate is required)		310
5.	Rain Gauge Sensor (TBRG)with heater Normal Rain gauge with mounting accessories (Calibration certificate of all sensors with validity certificate is required) Suitable Power supply for heater through SMF battery and charging it by solar panel.		20 sets
6.	DAS with IP-67 compliant Enclosure with mounting accessories and USB pen drive (16 GB or more) for data retrieval		330
7.	GPRS modem with dual SIM (4G) (compatible with 3G) facility with minimum 8 dbi antenna gain with mounting accessories		330
8.	Soil sensors (soil temperature and soil moistures at four depths 10cm, 30 cm, 70 cm and 100 cm) with mounting accessories (Calibration certificate of all sensors with validity certificate is required)		330 sets
9.	Pyranometer sensors with mounting accessories (Calibration certificate of all sensors with validity certificate is required)		330

S. No.	Item	Make & model Country of origin*	Qty. Nos.
1	2	3	4
10.	PAR sensors with mounting accessories (Calibration certificate of all sensors with validity certificate is required)		330
11.	10 meters Tilttable mast for weather parameters mounting Accessories & FRP Enclosure for housing suitable SMF batteries, charge controller and other accessories). (Test Certificate of mast from authorized agency must be produced)		330 sets
12.	Suitable SMF BATTERY for 20 days backup without Charging		330sets
13.	Suitable solar Panel for charging the SMF battery with mounting accessories on the mast.		330 sets
14.	Installation, integration of sensors of field Agro AWS, masts erecting, earthing for signal ground and lightning arrestor, display board as per specification, Site levelling and Fencing with gate with civil work.		330 sites
15.	Dismantling of old AWS including 10m X 10m fencing, Gate & 10m mast with buyback policy		130sets
16.	Transportation of materials to Agro AWS sites safely in good condition as per list enclosed in <b>Annexure –A</b>		One item
17.	Hard copy and soft copy in USB drive ( 16 GB) of operation and maintenance manuals		50 Nos.
18.	ONLINE Training of officials for 2 working days at each RMCs across India. Six ONLINE training will be conducted for Six RMC- Chennai, Delhi, Guwahati, Kolkata, Mumbai and Nagpur		One item
19.	Operational Training for each Nodal officers at 330 Agro AWS sites		330 sites
<b>Hardware and Software for Central Data Receiving and Processing System</b>			
20.	Blade Servers with Rack and other associated accessories, 21" LED Monitor, KVM switch, keyboard and mouse		02
21.	Red Hat Enterprise Linux OS with PREMIUM License		10
22.	VM application software with Licence		10

*Atul Anjan Anjan*  
*Wadhwa*  
*Wadhwa*

S. No.	Item	Make & model Country of origin*	Qty. Nos.
1	2	3	4
23.	Virtual Centre (VC) with application with License.		02
24.	SQL Database with License		02
25.	Storage Device and with SAN switch.		01
26.	Workstations, Linux OS with License and all its accessories, 24" LED Monitor, keyboard and mouse		06
27.	On line UPS 5 KVA with battery bank for Twelve hours Battery backup on full load.		02
28.	Application software for Central Server at IMD Pune with License version and all its source code alongwith its maintenance, updates and upgrades during two years warranty period and Five years comprehensive AMC.		One item
29.	Design and Development of website for AWS and all its source code along with its maintenance, updates and upgrades during two years warranty period and Five years comprehensive AMC.		One item
30.	Design and Development of API for AWS /Agro AWS/ARG and all its source code. Its maintenance, upgradation during two years warranty period and Five years comprehensive AMC.		One item
31.	Application software for Six RMCs with License version and all its source code along with its maintenance, updates and upgrade during two years warranty period and Five years comprehensive AMC.		One item
32.	Training of 5 IMD officials for 5 working days at IMD Pune on Sever configuration, application software design, Hardware maintenance of server ,UPS, mobile APP, API etc.		One item
<b>During two Years warranty and Comprehensive Annual Maintenance Contract for Five years</b>			

33.	<b>Recurring cost towards payment of GPRS service</b> (During two-year warranty period)		One item
34.	<b>Comprehensive AMC charges for 330 Agro sites, Server, Workstations, Application software, website, mobile App, API, and UPS with its battery including recurring cost of GPRS service after expiry of two years warranty.</b> First year Second year Third year Fourth year Fifth year		One item

Note\*: It is mandatory to mention the make and model of each offered Stores/Items

*Atul Anjil Anjan Kumar*  
*Udayak*

Chapter 5Price Schedule (to be utilized by the bidders for quoting their prices)**TECHNICAL BID WHICH WILL LEAD TO REJECTION OF THE BID)**

The Bidder shall submit the final list (List of Deliverables) of their proposal in given below format for all the stores, H/w, S/w, items, subunits etc. and all other services which bidder is going to offer in their technical proposal to meet the requirement under "Chapter 4 - Specifications & allied Technical Details" of this tender document. The list of deliverables shall be same as submitted in the price bid. The price bid shall not be considered if it is not matching with the list of deliverables submitted with the technical bids.

(.....Name of the bidding company...)

S. No.	Name of Item/ Store	Make & Model *	Country of origin	Quantity	Unit Price			Total price =(5x8)
					Base Price	Applicable Taxes & Duties	Total unit price	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<b>STORES (Hardware &amp; software)</b>								
<b>SERVICES</b>								

**Note\*:** It is mandatory to mention the make and model of each offered stores.

Total Tender price in figure:

and in words:

*Paul Anjia Anja Handwritten signature*  
*Handwritten signature*



**Note/instruction:**

1. **The bidder shall mention the Name of the bidding company on the first line of the excel sheet for quoting the prices.**
2. Price shall be preferred in above format.
3. The names of each stores/items offered in technical proposal must be mentioned with make & Model including services etc. if any. The deliverables list attached with financial bid must be exactly same as per the technical bids.
4. Charges, if any, for inland (within the India) Transportation /freight /insurance of stores shall be mentioned. In case not mentioned, it is treated as included /free of cost.
5. If there is a discrepancy between the unit price and total price THE UNIT PRICE shall prevail.
6. All applicable taxes must be mentioned against each item. Rate of each applicable tax must be mentioned in price bid. If taxes not mentioned, then it is treated that price quoted is inclusive of taxes.
7. Costing for each and every items and sub items which is offered in technical bid shall be done with all breakups. Charges for FAT, Trainings, installation, SAT and other services etc. are to be mentioned clearly in price bid.
8. Price Bid (in pdf format excluding note/instruction) shall be uploaded oneprocure.gov.in

Signature of Bidder\_\_\_\_\_

Seal of the Bidder\_\_\_\_\_

*Arjun Anjan Kumar*  
*Arjun Anjan Kumar*

Chapter 6Contract Forms

The firm shall use the contract forms as per the format prescribed as follows:



- a) Checklist (**Annexure-I**).
- b) Tender Terms & Conditions Acceptance Form (**Annexure-II**).
- c) Undertaking for Tender/Bid Security Declaration (**Annexure-III**).
- d) Original Equipment Manufacturer (OEM) Manufacturer's Authorization Form (**Annexure-IV**).
- f) Pre-Contract Integrity Pact (**Annexure-V**).
- g) List of Deliverables (**Annexure-VI**)

*Atul Arjita Arjan Khush*  
*10/10/2022*

## Annexure-I

CHECKLIST

S. No	Activity	Compliance Yes/ No/NA	Page No. of your bid
1	Is Firm Registration certificate from Government bodies have attached with technical bid?		
2.	(i) Have you enclosed EMD document?		
	(ii) <b>Is the EMD document submitted by other firm other than participating firm? If yes, then bid is likely to be ignored.</b>		
	(iii) Is Registration certificate from NSIC/Government bodies on SSI attached for relaxation of EMD?		
	(iv) Shall EMD be valid for 240 days?		
3.	Have you kept validity of your bid as per the TE document?		
4.	Have you enclosed <b><u>Tender Terms &amp; Conditions Acceptance Form</u></b> duly filled and signed (i.e. terms and conditions are acceptable) with original set of tender. Tenders may be ignored if not signed.		
5.	If you are desirous of availing purchase preference as a local supplier, have you enclosed undertaking as per Annexure – II and details of local content / value addition as per Annexure – III		
6	Have you enclosed an undertaking for restrictions on procurement from a bidder of a country which shares a land border with India as per Annexure – V		
7.	Have you enclosed clause-by-clause <b><u>compliance Statement</u></b> for the “Specifications and allied technical details” section?		
8.	Have you submitted copy of the last purchase order(s) and end user certificate?		

 Anjan Kumar  
 Belge

9.	Is tender Submitted by an OEM? (ii) Is tender Submitted by an integrator Agent/ Dealer/ Supplier/ Distributor/ Stockist etc.of OEM? (iii)Whether Back-to-back support agreement with OEMand OSC <b>attached</b> ?		
10	(i) Permanent Account No. of bidding firm with proof.  (ii) Is sales & service tax / GST number with registration certificate attached?		
11	Name of the firm who quoted the price		
12.	Name of tender currency given in which order to be placed?		
13.	Name of the supplier with complete address to whom supply order to be placed to be submitted on company's letter head in original signed by authorized signatory.		
14.	Have you enclosed the signed Pre-Contract Integrity Pact as per prescribed format under Annexure-V		

(Name & Signature with date and firm/company seal)

*Atul Anjil Anjan Kumar*  
*(Signature)*

## Annexure-II

**Tender Terms & Conditions Acceptance Form**

(For all the terms & conditions of tender document are acceptable to Bidder)

To

The Director General of Meteorology,  
India Meteorological Department,  
Lodi Road, New Delhi-110003

Ref: TE document No. CPU/                      dated

I/We, the undersigned have examined the above mentioned TE document, including amendment/corrigendum No.                      , dated (if any), the receipt of which is hereby confirmed. We now offer to supply and deliver the goods and services in conformity with your above referred document.

If our tender is accepted, we undertake to supply the goods and perform the services (Installation & commissioning etc.) as mentioned in tender document with the delivery schedule specified in the —RFP- List of requirements.

I/We further confirm that, if supply / purchase order is placed to firm, we shall provide performance security of required amount in an acceptable form for due performance of the contract.

I/We agree to keep our tender valid for acceptance as required in tender document or for subsequently extended period, if any, agreed to by us. I/We also accordingly confirm to abide by this tender up to the aforesaid period and this tender may be accepted any time before the expiry of the aforesaid period. I/We further confirm that, until a formal contract is executed, this tender read with your written acceptance thereof within the aforesaid period shall constitute a binding contract between us.

I/We further understand that you are not bound to accept the lowest or any tender you may receive against your above-referred tender enquiry.

We confirm that we do not stand deregistered/banned/blacklisted by any Govt. Authorities.

I/We confirm that we fully accept and agree to all the terms and conditions specified in above mentioned TE document, including amendment/ corrigendum etc. if any.

(Signature with date and seal of the company)

(Name and designation)

Duly authorized to sign tender for and on behalf of Bidder

**.Note\*:**

1. Firm/company shall use their own printed letter head for issuing this certificate.
2. Acceptance shall be unconditional

*Atul Anjan Anjan Kumar*  
*Deligub*

## Annexure – III

**Undertaking for Tender/Bid Security Declaration**

We, \_\_\_\_\_ (Legal Name of Tenderer / Bidder) hereby confirm that we are submitting the tender for \_\_\_\_\_ (Name of the work as per Para 2 of NIT) floated by India Meteorological Department, Ministry of Earth Sciences, Govt. of India, New Delhi.

We do hereby undertake that in the following cases, we shall be debarred from participating in the retender of this work and also will be debarred from participating in any tender of India Meteorological Department, Ministry of Earth Sciences, Govt. of India, New Delhi for a period as specified in table below:

Sr. No.	Case	Period of Ban*
1	if we resile or withdraw our Tender during the period of Tender evaluation before opening of Financial Bids or	2 Years
2	i) if, having been notified of the acceptance of our Tender by Office of the DGM, India Meteorological Department, Ministry of Earth Sciences, Govt. of India, New Delhi during the period of tender validity, we ii) Fail or refuse to enter into rate contract with O/o the DGM, India Meteorological Department, Ministry of Earth Sciences, Govt. of India, New Delhi within the time limit specified and/or iii) Fail or refuse to submit unconditional acceptance of Supply Order within the time limit specified and/or iv) Fail or refuse to furnish the performance security in accordance with Para 9.4 of Chapter-2 within the time limit specified	3 Years

*\*Period of ban shall be from the date of resiling / withdrawal of this tender or from date of issue of Supply Order, as the case may be.*

(Signature with date and seal of the company)

(Name and designation)

**Note:** The undertaking shall be signed by authorized signatory, duly authorised to sign tender for and on behalf of Bidder.

*Handwritten signature: Anjita Anjan*  
*Handwritten signature: [unclear]*  
*Handwritten signature: [unclear]*

Annexure-IV

ORIGINAL EQUIPMENT MANUFACTURER (OEM)MANUFACTURER'S AUTHORIZATION FORM

Tender No.: \_\_\_\_\_ Date: \_\_\_\_\_

To

The Director General of Meteorology,  
India Meteorological Department,  
Lodi Road, New Delhi-110003

Dear Sir,

We manufacturers of original equipments at (address of factory) do hereby authorize M/s. (Name and address of Agent) to submit a bid, negotiate and receive the order from you against your tender enquiry.

No company or firm or individual other than M/s. \_\_\_\_\_ is authorized to bid, and conclude the contract in regard to this business.

We hereby extend our full guarantee, warranty and under CAMC as per clause \_\_\_\_\_ of the general Conditions of Contract and Clause\_ of the Special Conditions of Contract for the goods and services offered by the above firm.

Yours faithfully,

(Name)

(Name of manufactures)

**Note:** This letter of authority should be on the letterhead of the manufacturer and should be signed by a person competent and having the power of attorney to bind the manufacturer. It should be included by the Bidder in its techno-commercial unpriced bid.

*Atul Anjil Anjan Kumar*  
*Atul Anjil Anjan Kumar*

Annexure-V

**PRE-CONTRACT INTEGRITY PACT**

**General**

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on day of the -----month of (year-----), between, on one hand, the President of India acting through **Director General of Meteorology, India Meteorological Department, Ministry of Earth Sciences, Government of India, Lodi Road, New Delhi** (hereinafter called the "BUYER", which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns) of the First Part and M/s represented by Shri.....  
 ..... Chief Executive Officer (hereinafter called the "BIDDER/Seller" which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

1. WHEREAS the BUYER proposes for **PROCUREMENT OF AGRO AUTOMATIC WEATHER STATION (AAWS) FOR INSTALLATION AT 330 SITES ACROSS INDIA AND CENTRAL DATA RECEIVING AND PROCESSING SYSTEM AT IMD PUNE** as per details in the tender Document and the BIDDER/Seller is willing to offer the stores and WHEREAS the BIDDER is a private company/public company/Government undertaking /partnership/registered export agency, constituted in accordance with the relevant law in the matter and the BUYER is a Ministry/Department of the Government of India performing its functions on behalf of the President of India.  
 NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to: -

Enabling the BUYER to obtain the desired said stores/equipment at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and Enabling BIDDERS to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the BUYER will commit to prevent corruption, in any form, by its officials by following transparent procedures.

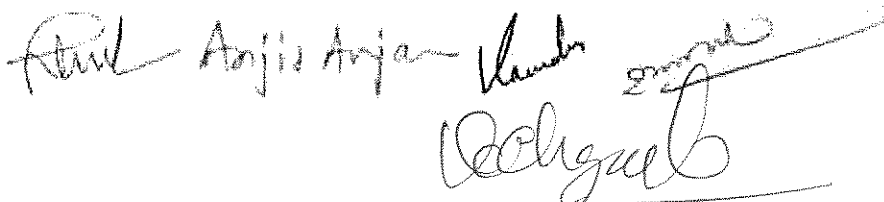
The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:

**Commitments of the BUYER**

*Handwritten signatures and names:*  
 Anil Anjan Kumar  
 [Signature]  
 [Signature]



- 1.1 The BUYER undertakes that no official of the BUYER, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favor or any material or immaterial benefit or any other advantage from the BIDDER, either for themselves or for any person, organization or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.
- 1.2 The BUYER will, during the pre-contract stage, treat all BIDDERS alike, and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other BIDDERS.
- 1.3 All the officials of the BUYER will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.
2. In case any such preceding misconduct on the part of such official(s) is reported by the BIDDER to the BUYER with full and verifiable facts and the same is prima facie found to be correct by the BUYER, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the BUYER and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the BUYER the proceedings under the contract would not be stalled.
3. **Commitments of Bidders**  
The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre- contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following:-
  - 3.1 The BIDDER shall not commit offence under Indian Penal Code /Prevention of Corruption Act.
  - 3.2 The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favor, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.
  - 3.3 The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favor, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the Government for showing or forbearing to show favor or disfavor to any person in relation to the contract or any other contract with the Government.


 The block contains several handwritten signatures and initials in black ink. One prominent signature appears to read 'Anjil Anjan' followed by other illegible names and initials. There are also some scribbled-out marks and a large, stylized signature at the bottom.

- 3.4 \* BIDDERS shall disclose the name and address of agents and representatives and Indian BIDDERS shall disclose their foreign principals or associates.
- 3.5 \* BIDDERS shall disclose the payments to be made by them to agents/brokers or any other intermediary, in connection with this bid/contract.
- 3.6 \* The BIDDER further confirms and declares to the BUYER that the BIDDER is the original manufacturer/integrator/authorized government sponsored export entity of the defense stores and has not engaged any individual or BIDDER or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the BUYER or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, BIDDER or company in respect of any such intercession, facilitation or recommendation.
- 3.7 The BIDDER, either while presenting the bid or during pre- contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the BUYER or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments. The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.
- 3.8 The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.
- 3.9 The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.
- 3.10 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.
- 3.11 The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.
- 3.12 If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of the BUYER, or alternatively, if any relative of an officer of the BUYER has financial interest/stake in the BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filing of tender. The term „relative“ for this purpose would be as defined in Section 6 of the Companies Act 1956.
- 3.13 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the BUYER.

*Abdul Anjish Anjan Kumar*  
*W. D. Singh*

#### 4. Previous Transgression

- 4.1 The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify BIDDER's exclusion from the tender process.
- 4.2 The BIDDER agrees that if it makes incorrect statement on this subject, BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

#### 5. Sanctions for Violations

##### 5.1 Actions are as follows:

- (i) To immediately call off the pre-contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER(s) would continue.
- (ii) The Earnest Money Deposit (in pre-contract stage) and/or Security Deposit/Performance Bond (after the contract is signed) shall stand forfeited either fully or partially, as decided by the BUYER and the BUYER shall not be required to assign any reason therefore.
- (iii) To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.
- (iv) To recover all sums already paid by the BUYER, and in case of an Indian BIDDER with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a BIDDER from a country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the BIDDER from the BUYER in connection with any other contract for any other stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest.
- (v) To encash the advance bank guarantee and performance bond/warranty bond, if furnished by the BIDDER, in order to recover the payments, already made by the BUYER, along with interest.
- (vi) To cancel all or any other Contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the BUYER resulting from such cancellation/rescission and the BUYER shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.
- (vii) To debar the BIDDER from participating in future bidding processes of the Government of India for a minimum period of five years, which may be further extended at the discretion of the BUYER.

*Retired Anjia Anjan* *Khandu* *gomes*  
*Delegat*

- (viii) To recover all sums paid in violation of this Pact by BIDDER(s) to any middleman or agent or broker with a view to securing the contract.
  - (ix) In cases where irrevocable Letters of Credit have been received in respect of any contract signed by the BUYER with the BIDDER, the same shall not be opened.
  - (x) Forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.
- 52 The BUYER will be entitled to take all or any of the actions mentioned at para 6.1 (i) to (x) of this Pact also on the Commission by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of an offence as defined in Chapter IX of the Indian Penal code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.
- 53 The decision of the BUYER to the effect that a breach of the provisions of this Pact has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the Independent Monitor(s) appointed for the purposes of this Pact.

#### 6. Fail Clause

The BIDDER undertakes that it has not supplied/is not supplying similar product/systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry/Department of the Government of India or PSU and if it is found at any stage that similar product/systems or sub systems was supplied by the BIDDER to any other Ministry/Department of the Government of India or a PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the BUYER, if the contract has already been concluded.

#### 7. Independent Monitors

- 7.1 The BUYER has appointed following two Independent Monitors (hereinafter referred to as Monitors) for this Pact in consultation with the Central Vigilance Commission;
- i. Shri S. K. Sarkar, IAS (Retd), B-104, Nayantara Apt., Plot 8B, Sector-07, Dwarka, New Delhi - 110075 (E-mail: [sksarkar1979@gmail.com](mailto:sksarkar1979@gmail.com), Mobile No. 9811149324).
  - ii. Shri Rakesh Goyal, IRSE (Retd), 2094, Joy Apartment, Sector 2, Dwarka, Delhi-110075 (E-mail: [goyal1259@gmail.com](mailto:goyal1259@gmail.com), Mobile No. 9717644264).
- 7.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.

*Handwritten signatures and initials:*  
 Anil Anjan Kumar  
 Uday Singh

- 7.3 The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.
- 7.4 Both the parties accept that the Monitors have the right to access all the documents relating to the project/procurement, including minutes of meetings.
- 7.5 As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the BUYER.
- 7.6 The BIDDER(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the BUYER including that provided by the BIDDER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the BIDDER/Subcontractor(s) with confidentiality.
- 7.7 The BUYER will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.
- 7.8 The Monitor will submit a written report to the designated Authority of BUYER/Secretary in the Department/ within 8 to 10 weeks from the date of reference or intimation to him by the BUYER/BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.
8. **Facilitation of Investigation**  
In case of any allegation of violation of any provisions of this Pact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.
9. **Law and Place of Jurisdiction**  
This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the BUYER.
10. **Other Legal Actions**  
The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.
11. **Validity**  
11.1 The validity of this Integrity Pact shall be from date of its signing and extend upto 8 years or the complete execution of the contract to the satisfaction of both the BUYER and the BIDDER/Seller,

*Atul Anjil Anjan* *Handwritten signature*  
*Handwritten signature*

including warranty period, whichever is later. In case BIDDER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract.

11.2 Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions

12. The parties hereby sign this Integrity Pact at New Delhi on.....

BUYER  
Name of the officer.  
EXECUTIVEOFFICER Designation  
Deptt. /MINISTRY

BIDDER  
CHIEF

Witness

Witness

1. \_

1. \_

2. \_

2. \_

\* Provisions of these clauses would need to be amended/ deleted in line with the policy of the BUYER in regard to involvement of Indian agents of foreign suppliers.

*Paul Anjil Anja Kumar* *[Signature]*  
*[Signature]*

## Annexure-VI

**LIST OF DELIVERABLES AND PRICE BID FORMAT**

The firm shall be able to complete the installation of Agro AWS with following list of deliverables at each site. These items only will be considered for price comparison. All the details of the deliverables should be mentioned as per the price bid format mentioned below:

S. No.	Item	Make & model Country of origin	Qty Nos	UNIT PRICE			Total price
				Base price	Applicable taxes and duties	Total price	
1	2	3	4	5	6	7= 5+ 6	8=7x4
I.	<b>Sensors and hardware for Agro AWS site</b>						
1.	Temperature Humidity Sensor with Radiation Shield and mounting accessories (Calibration certificate of all sensors with validity certificate is required)		330				
2.	Pressure Sensor and mounting accessories (Calibration certificate of all sensors with validity certificate is required)		330				
3.	Ultrasonic Wind sensors with mounting accessories (Calibration certificate of all sensors with validity certificate is required)		660				

*Atul Anjia Anjan Kumar*  
*Uchigade*

S. No.	Item	Make & model Country of origin	Qty Nos	UNIT PRICE			Total price
				Base price	Applicable taxes and duties	Total price	
1	2	3	4	5	6	7=5+6	8=7x4
4.	Rain Gauge Sensor (TBRG) with mounting accessories (Calibration certificate of all sensors with validity certificate is required)		310				
5.	Rain Gauge Sensor (TBRG) with <b>Heater</b> + Normal Rain gauge and mounting accessories (Calibration certificate of all sensors with validity certificate is required) Suitable Power supply for heater through SMF battery and charging it by solar panel.		20 sets				
6.	DAS with Enclosure with mounting accessories and USB pen drive (16 GB or more) for data retrieval		330				
7.	GPRS modem with dual SIM (4G) (compatible with 3G) facility with minimum 8 dbi antenna gain with mounting accessories		330				
8.	Soil sensors (soil temperature and soil moistures at four depths 10cm, 30 cm, 70cm and 100 cm) with mounting accessories (Calibration certificate of all sensors with validity certificate is required)		330 sets				
9.	Thermopile based Pyranometers sensors with mounting accessories (Calibration certificate of all sensors with validity certificate is required)		330				

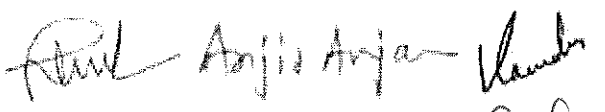

*Arjun Anjan Kumar*  
*Arjun Anjan Kumar*



S. No.	Item	Make & model Country of origin	Qty Nos	UNIT PRICE			Total price
				Base price	Applicable taxes and duties	Total price	
1	2	3	4	5	6	7=5+6	8=7x4
10.	PAR sensors with mounting accessories (Calibration certificate of all sensors with validity certificate is required)		330				
11.	10 meters Tilttable mast for weather parameters mounting accessories & FRP Enclosure for housing SMF batteries, charge controller and other accessories)		330 sets				
12.	Suitable SMF BATTERY for 20 days backup during complete cloudy condition without charging the battery.		330				
13.	Suitable solar Panel, to charge the Supplied SMF battery, with mounting accessories on the mast.		330 sets				
14.	Installation, integration of sensors of field Agro AWS, masts erecting, earthing for signal ground and lightning arrestor, display board as per specification, Site leveling and Fencing with gate with civil work.		330 sites				
15.	Dismantling of old AWS including 10m X 10m fencing, Gate & 10m mast with buyback policy		130 sets				
16.	Transportation of materials to Agro AWS sites safely in good condition per list enclosed in Annexure -A		One item				

*Atul Anjia Anjan*  
*Wolign*

S. No.	Item	Make & model Country of origin	Qty Nos	UNIT PRICE			Total price
				Base price	Applicable taxes and duties	Total price	
1	2	3	4	5	6	7=5+6	8=7x4
17.	Hard copy and soft copy in USB drive ( 16 GB) of operation and maintenance manuals		50				
18	ONLINE Training of officials for 2 working days at each RMC across India. Six ONLINE training will be conducted for Six RMC- Chennai, Delhi, Guwahati, Kolkata, Mumbai and Nagpur		item				
19.	Operational Training for each Nodal officers at 330 Agro AWS sites		330 sites				
<b>II.</b>	<b>Hardware and Software for Central Data Receiving and Processing System</b>						
20.	Blade Servers with Rack and other associated accessories, 21" LED Monitor, KVM switch, keyboard and mouse		02				
21.	Red Hat Enterprise Linux OS with PREMIUM License		10				
22.	VM application software with Licence		10				
23.	Virtual Centre (VC) with Application software with License.		02				
24.	SQL Database with License		02				
25.	Storage Device and with SAN Switch.		01				
26.	Layer 2 – Access Switch and all its accessories		02				

27.	Workstations, Linux OS with License and all its accessories, 24" LED Monitor, KVM switch, keyboard and mouse		06				
28.	On line UPS 5 KVA with battery bank for Twelve hours battery backup on full load.		02				
29.	Application software for Central Server at IMD Pune with License version and all its source code alongwith its maintenance, updates and upgrades during two years warranty period and Five years comprehensive AMC.		One item				
30.	Design and Development of website for Agro AWS and all its source code alongwith its maintenance, updates, upgrades during two years warranty period and Five years Comprehensive AMC.		One item				
31.	Design and Development of Mobile APP for AWS and all its source code. Its maintenance, up gradation during two years warranty period and Five years comprehensive AMC.		One item				
32.	Application software for Six RMCs with License version and all its source code along with its maintenance, updates and upgrade during two years warranty period and Five years comprehensive AMC.		One item				
33.	Training of 5 IMD officials for 5 working days at IMD Pune on Sever configuration, application software design, Hardware maintenance of servers , UPS, Web server/ website, security /API/Mobile APP etc.		One item				

*Anjil Anjan*  
*[Signature]*

S. No.	Item	Make & model Country of origin	Qty Nos	UNIT PRICE			Total price
				Base price	Applicable taxes and duties	Total price	
1	2	3	4	5	6	7=5+6	8=7x4
III	During two Years comprehensive warranty and Five years Comprehensive Annual Maintenance Contract.						
34.	Recurring cost towards payment of GPRS service for two-year Warranty Period		330 sites				
35.	CAMC charges for 330 sites also include recurring cost of GPRS service after expiry of two years warranty:		One item				
	First year						
	Second year						
	Third year						
	Fourth year						
	Fifth year						
36.	TOTAL						
IV	Dismantle and Buy back of old mast, gate and fencing of existing IMD AWS site						
37.	Dismantle and Buy back of old 10 m Mast and accessories, Gate and Fencing of existing IMD AWS site.		130 sites				
38.	GRAND TOTAL= S.N. 34 – S.N. 35						

Total Price in words:

*Arjun Anjita Anjan Kumar*  
*Devgul*

**Chapter – 7****OTHER STANDARD FORMS, IF ANY, TO BE UTILISED BY THE PURCHASER AND THE BIDDERS**

Other Standard Forms, if any, to be utilised by the purchaser and the bidders are as follows:

- I. Bank Guarantee Model Format for Performance Security (**Annexure-VI**)
- II. Proforma for Performance Statement (**Annexure-VII**)
- III. Proforma for Certificate from the User indicating successful operation of AAWS (**Annexure-VIII**)
- IV. Non-Blacklisting declaration (**Annexure-IX**)
- V. Bank Guarantee Model Format for Warranty period (**Annexure-X**)

*Atul Anjil Anjan Kumar*  
*Devgul*

Annexure-VII

**BANK GUARANTEE MODEL FORMAT FOR PERFORMANCE SECURITY**

To

The President of India  
Through: -  
Director General of Meteorology,  
India Meteorological Department,  
Lodi Road, New Delhi – 110 003.

WHEREAS \_\_\_\_\_ (Name and address of bidder)  
(Hereinafter called "Bidder") has undertaken, in pursuance of contract No.  
\_\_\_\_\_ dated \_\_\_\_\_ to supply (description of goods  
and services) (herein after called "the contract").

AND WHEREAS it has been stipulated by you in the said contract that bidder shall  
furnish you with a bank guarantee by a scheduled commercial bank recognized by you  
for the sum specified therein as security for compliance with its obligations in accordance  
with the contract;

AND WHEREAS we have agreed to give bidder such a bank guarantee; Now  
THEREFORE we hereby bid that we are guarantors and responsible to you, on behalf  
of \_\_\_\_\_ bidder, up to a total  
of \_\_\_\_\_

(Amount of the guarantee in words and figures), and we undertake to pay you, upon your  
first written demand declaring bidder to be in default under the contract and without cavil  
or argument, any sum or sums within the limits of (amount of guarantee) as aforesaid,  
without your needing to prove or to show grounds or reasons for your demand or the sum  
specified therein. We hereby waive the necessity of your demanding the said debt from  
bidder before presenting us with the demand. We further agree that no change or addition  
to or other modification of the terms of the contract to be performed there under or of  
any of the contract documents which may be made between you and bidder shall in any  
way release us from any liability under this guarantee and we hereby waive notice of any  
such change, addition or modification. This guarantee shall be valid up to and  
including the day of, 20\_.

(Signature with date of the authorized officer of the Bank)

Name and designation of the officer

Seal, name & address of the Bank and address of the Br

*Atul Anjan Anjan*  
*[Handwritten signature]*

Annexure-VIII

**PROFORMA FOR PERFORMANCE STATEMENT**

Bid No. \_\_\_\_\_

Date of Opening \_\_\_\_\_ Time \_\_\_\_\_ Hours \_\_\_\_\_

Name of the firm \_\_\_\_\_

Order place by (full address of the purchaser)	Order No. and date	Description and quantity of ordered equipment	Value of order	Date of completion of delivery as per contract actual	Remarks including reason for late delivery, if any	Has the equipment been satisfactorily functioning?

(Signature of the authorized officer of the Firm)

Seal, name & address of the Bidding Firm

Name and designation of the officer

*Paul Anjio Anjan Kumar*  
*Udehpal*

Annexure-VIII

**PROFORMA FOR PERFORMANCE STATEMENT**

Bid No. \_\_\_\_\_

Date of Opening \_\_\_\_\_ Time \_\_\_\_\_ Hours \_\_\_\_\_.

Name of the firm \_\_\_\_\_.

Order place by (full address of the purchaser)	Order No. and date	Description and quantity of ordered equipment	Value of order	Date of completion of delivery as per contract actual	Remarks including reason for late delivery, if any	Has the equipment been satisfactorily functioning?

(Signature of the authorized officer of the Firm)

Seal, name & address of the Bidding Firm

Name and designation of the officer

*Handwritten signature: Anil Anjan Kumar*  
*(Signature)*



Annexure-IX

**PROFORMA FOR CERTIFICATE FROM THE USER INDICATING  
SUCCESSFUL OPERATION OF AGRO AUTOMATIC WEATHER STATION  
(AAWS)**

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that the Agro Automatic Weather Station (AAWS) with associated subsystems \_\_\_\_\_ and \_\_\_\_\_ peripherals \_\_\_\_\_ supplied \_\_\_\_\_ by M/s \_\_\_\_\_ to \_\_\_\_\_ on date \_\_\_\_\_ vide M/s \_\_\_\_\_ Supply order

No. \_\_\_\_\_ dated \_\_\_\_\_ (copy enclosed)

installed and commissioned on \_\_\_\_\_. The Agro Automatic Weather Station (AAWS) is working satisfactorily for \_\_\_\_\_ months / years. The said AAWS is under continuous operation since \_\_\_\_\_ and are providing satisfactory results.

Signature of authorized signatory

Name of authorized signatory

Complete office address

With office seal and date

*Pratik Anjiv Anjan Khambh*  
*Pratik*

Annexure-X

**Non-Blacklisting declaration****(Sample Format only)**

To:

Date:

(Consignee Name and address)

Subject: Non-Blacklisting declaration in connection with RFP No. \_\_\_\_\_  
dated \_\_\_\_\_ for supply of Agro Automatic Weather Station (AAWS) to  
India Met. Department.

Dear Sir,

This is to notify that our Firm/ Company/ Organization intends to submit a proposal in response to invitation for RFP No. \_\_\_\_\_ for supply of Agro Automatic Weather Station (AAWS) to India Met. Department. In accordance with the above we declare that:

- a) We are not involved in any major litigation that may have an impact of affecting or compromising the delivery of services as required under this assignment.
- b) We are not blacklisted by any Central/ State Government/ Agency of Central/ State Government of India or any other country in the World/ Public Sector Undertaking/ any Regulatory Authorities in India or any other country in the world for any kind of fraudulent activities.

Sincerely,

(BIDDERS Name)

Title

Signature with firm's seal

*Abdul Anjish Anjan Kumar*  
*(Signature)*

## Annexure-XI

**BANK GUARANTEE MODEL FORMAT DURING WARRANTY PERIOD**

To

The President of India  
Through: -  
Director General of Meteorology,  
India Meteorological Department,  
Lodi Road, New Delhi – 110 003.

WHEREAS \_\_\_\_\_ (Name and address of bidder)  
(Hereinafter called "Bidder") has undertaken, in pursuance of contract No.  
\_\_\_\_\_ dated \_\_\_\_\_ to supply (description of goods  
and services) (herein after called "the contract").

AND WHEREAS it has been stipulated by you in the said contract that bidder shall  
furnish you with a bank guarantee by a scheduled commercial bank recognized by you  
for the sum specified therein as security for compliance with its obligations in accordance  
with the contract;

AND WHEREAS we have agreed to give bidder such a bank guarantee; Now  
THEREFORE we hereby bidder that we are guarantors and responsible to you, on behalf  
of \_\_\_\_\_ bidder, up to a total  
of \_\_\_\_\_

(Amount of the guarantee in words and figures), and we undertake to pay you, upon your  
first written demand declaring bidder to be in default under the contract and without cavil  
or argument, any sum or sums within the limits of (amount of guarantee) as aforesaid,  
without your needing to prove or to show grounds or reasons for your demand or the sum  
specified therein. We hereby waive the necessity of your demanding the said debt from  
bidder before presenting us with the demand. We further agree that no change or addition  
to or other modification of the terms of the contract to be performed there under or of  
any of the contract documents which may be made between you and bidder shall in any  
way release us from any liability under this guarantee and we hereby waive notice of any  
such change, addition or modification. This guarantee shall be valid up to and  
including the day of, 20, .

(Signature with date of the authorized officer of the Bank)  
Name and designation of the officer  
Seal, name & address of the Bank and address of the Br.

*Atul Anjia Anja Khandu*  
*Devi*