India Meteorological Department
Mausam Bhawan, Lodi Road
New Delhi-110003

NOTICE INVITING TENDER (NIT)

Tender Enquiry No. CPU/53/0121/1537-Vol.II **Dated: 17.12.2021**

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 tenders in two bid system i.e. (i) Technical bid & (ii) Price bid (Separately) from eligible and qualified **Indian Bidders** for procurement of following Goods/Articles/Services.

2. Name of Goods/Articles/Services : Procurement of 3 (Three) Nos. of C-Band Dual Polarimetric SSPA based Doppler Weather Radars

3. Specification and Quantity: As per "RFP"

4. Tender schedule is as follows:

1.	PRE BID Conference	05.01.2022 / 1100 Hrs. Place – Mausam Bhawan, Lodi Road, New Delhi-110003 Tele : 011 - 43824224
2.	Closing date and time for submission of tender	04.02.2022 / 1700 Hrs.
3.	Tender Opening date & time (Technical Bid)	08.02.2022/ 1200 Hrs.
4.	Place of Tender Opening	Central Purchase Unit, O/o DGM, IMD, Lodi Road ,New Delhi.

5. Earnest Money Deposit (EMD): As per Office Memoandum No.F.9/4/2020-PPD dated 12.11.2020 issued by Ministry of Finance Department of Expenditure PPD, No EMD is required for the tender. The firm has to submit a signed Bid Security Declaration as per Annexure-II on their company letter head failing which their bid will be declared as unresponsive.

6. All prospective bidders are requested to attend the **Pre-bid meeting** as per venue, date and time indicated in the Para 4 above. Maximum two representatives of a firm with proof of their COVID-19 Vaccination Certificate of 2nd Dose, will be allowed to participate in Pre-Bid meeting. The prospective bidders are requested to send their queries preferably 5 days in advance before scheduled pre-bid meeting, on email: radarlab@gmail.com.

7. Bidders may download the **Tender Enquiry Document** from the web site www.imd.gov.in & www.eprocurement.gov.in/cpp and read the tender documents carefully before uploading the tender on CPP Portal.

8. The following 2 clauses may also be read under "Eligibility Criteria" of the Tender document :-

(i) Bidder has to submit a compliance certificate that comply with the Govt Order No. P-45021/2/2017-B.E.-II, Ministry of Commerce and Industry, Department of Industrial Policy and Promotion of Industry and Internal Trade (PP Section) dated 16.09.2020 and instructions issued from time to time failing which their bid shall not be accepted and liable to be rejected.

(ii) Compliance of Rule 14(xi) of the GFR 2017 which mandates the bidder from a country sharing land border with India to be registered with the competent authority. Bidder has to submit a compliance certificate that they comply with the Govt Order F.No. 6/18/2019-PPD dated 23rd July, 2020 of Ministry of Finance, DoE, Public Procurement Division, failing which their bid shall not be accepted and liable to be rejected.

9. Bidders shall ensure that their tenders are complete in all respects before uploading the same on CPP Portal. CPU will not be held responsible for any delay or corruption in the uploaded bids.

10. In the event of the tender opening date being declared as holiday for the purchase organization, the tender will be opened on the next working day. The venue and time of tender opening will remain the same.

11. Purchaser : The President of India
Through Director General of Meteorology,
India Meteorological Department,
Lodi Road, New Delhi-110003

12. Consignee: DGM (UAID),
India Meteorological Department,
Lodi Road, New Delhi-110003

13. Inspecting Authority: Director General of Meteorology,
India Meteorological Department,
Lodi Road, New Delhi-110003.

14. Inspection officer : Authorized Representative of Inspecting Authority

Director, Central Purchase Unit (CPU)
O/o Director General of Meteorology,
India Meteorological Department,
Lodi Road, New Delhi-110003.
Telefax No: 011-24698148

भारत मौसम विज्ञान विभाग

लोदी रोड, नई दिल्ली -110003

निविदा आमंत्रित करने की सूचना (एन आई टी)

निविदा जाँच सं. CPU/53/0121/1537-Vol.II **दिनांक: 17.12.2021**

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 भारतीय पात्र और अर्हक निविदाकारों से दो बिड प्रणाली अर्थात (एक) तकनीकी बिड और (दो) दर बिड में ओनलाइन टेंडर आमंत्रित करते हैं .

2. सामान/ वस्तुएँ/ सेवाओं का नामः Procurement of 3 (Three) Nos. of C-Band Dual Polarimetric SSPA based Doppler Weather Radars

3. विनिर्देशन और मात्रा : विनिर्देशन आर एफ पी के अनुसार, (मात्रा-01)

4. निविदा अनुसूची इस प्रकार हैः

1	प्री बिड कांफ्रेंस	दिनांक 05.01.2022 / 1100 बजे
2.	निविदा जमा करने की अंतिम तिथि व समय	दिनांक 04.02.2022 / 1700बजे
3.	निविदा खोलने की तिथि व समय (तकनीकी बिड)	दिनांक 08.02.2022 / 1200बजे
4.	निविदा खोलने का स्थान	केंद्रीय क्रय एकक, मौविमनि का कार्यालय भा.मौ.वि.वि , लोदी रोड, नई दिल्ली

5. धरोहर राशि (ई एम डी): वित् मंत्रालय, व्यय विभाग पीपीडी के कार्यालय ज्ञापन स. ऍफ़.९/४/२०२०-पीपीडी दिनांक १२/११/२०२० के अनुपालन में फर्मो को धरोहर राशी (ई ऍम डी) जमा करना आवश्यक नहीं है । फर्मों को अपनी कंपनी के लैटर हेड पर निविदा दस्तावेज़ के **अनुबंध-II** के अनुसार एक हस्ताक्षरित बोली सुरक्षा घोषणा प्रस्तुत करनी होगी, ऐसा न करने पर उनकी बोली को अनुत्तरदायी घोषित कर दिया जायेगा ।

6. सभी संभावित बोलीदाताओं से अनुरोध है कि वे उपरोक्त पैरा 4 में उल्लिखित स्थल, तिथि और समय अनुसार **बोली पूर्व बैठक में भाग लें** । एक फर्म के अधिकतम दो प्रतिनिधियों को उनके द्वितीय खुराक के कोविद-१९ टीकाकरण प्रमाण पत्र के प्रमाण के साथ बोली पूर्वक बैठक में भाग लेने की अनुमति दी जाएगी | संभावित बोलीदाता अपने प्रश्नों को अधिमानित 5 दिन पहले निर्धारित प्री-बिड मीटिंग से पहले ईमेल : radarlab@gmail.com पर भेजे ।

7. बोलीदाता वेब साइट www.imd.gov.in और www.eprocurement.gov.in से निविदा पूछताछ दस्तावेज डाउनलोड कर सकते हैं और सीपीपी पोर्टल पर निविदा अपलोड करने से पहले निविदा दस्तावेजों को ध्यान से पढ़ सकते हैं। **निविदाकर्ताओं को यह सुनिश्चित करना होगा कि उनकी सभी निविदाएँ सभी तरह से पूर्ण हैं किसी भी प्रकार के विलम्ब अथवा नुकसान के लिए क्रय संगठन जिम्मेवार नहीं होगा ।**

8. निविदा दस्तावेज के "पात्रता मानदंड" के तहत निम्नलिखित 2 खंड भी पढ़े जा सकते हैं: -

(i) बोलीदाता को एक अनुपालन प्रमाण पत्र प्रस्तुत करना होगा जो सरकार के आदेश संख्या पी-45021/2/2017-बीई-द्वितीय, वाणिज्य और उद्योग मंत्रालय, औद्योगिक नीति और उद्योग और आंतरिक व्यापार संवर्धन विभाग (पीपी अनुभाग) का अनुपालन करता है।) दिनांक 16.09.2020 और समय-समय पर जारी निर्देश, जिसमें विफल रहने पर उनकी बोली स्वीकार नहीं की जाएगी और अस्वीकार कर दी जाएगी।

(ii) जीएफआर 2017 के नियम 14(xi) का अनुपालन जो भारत के साथ भूमि सीमा साझा करने वाले देश के बोलीदाता को सक्षम प्राधिकारी के साथ पंजीकृत होने के लिए अनिवार्य करता है। बोलीदाता को एक अनुपालन प्रमाण पत्र प्रस्तुत करना होगा कि वे सरकार के आदेश एफ.सं. का अनुपालन करते हैं। 6/18/2019-पीपीडी दिनांक 23 जुलाई, 2020 वित्त मंत्रालय, डीओई, सार्वजनिक खरीद विभाग, में विफल होने पर उनकी बोली को स्वीकार नहीं किया जाएगा और अस्वीकार कर दिया जाएगा।

9. यदि निविदा खोलने की तारीख के दिन क्रय संगठन का अवकाश घोषित होता है तो निविदा अगले कार्य दिवस को खोली जाएगी ।निविदा खोलने का स्थान और तारीख वही रहेंगे ।

10. यदि निविदा खोलने की तारीख के दिन क्रय संगठन का अवकाश घोषित होता है तो निविदा अगले कार्य दिवस को खोली जाएगी ।निविदा खोलने का स्थान और तारीख वही रहेंगे ।

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

12. परेषितिः मौसम विज्ञान के महानिदेशक (यू ए आई डी)
भारत मौसम विज्ञान विभाग
लोदी रोड, नई दिल्ली-110003

13.	जाँच प्राधिकारीः	मौसम विज्ञान के महानिदेशक भारत मौसम विज्ञान विभाग लोदी रोड, नई दिल्ली-110003
14.	जाँच अधिकारीः	जाँच प्राधिकारी का प्राधिकृत प्रतिनिधि निदेशक, केंद्रीय क्रय एकक (कें.क्र.ए) , मौसम विज्ञान के महानिदेशक का कार्यालय, लोदी रोड, नई दिल्ली- 110003 टेलीफैक्स सं. : 011-24698148

Government of India
Ministry of Earth Sciences
India Meteorological Department
Lodi Road
New Delhi-110003

IMD TENDER DOCUMENT
No._____

FOR

PROCUREMENT OF

DOPPLER WEATHER RADAR SYSTEMS
C-BAND DUAL POLARIZATION

(WITH SSPA based TRANSMITTER)

September, 2021

Upper Air Instruments Division

INDEX

CONTENTS

CHAPTER-1

INSTRUCTIONS TO BIDDERS

1. Introduction:

The India Meteorological Department (IMD) has issued this Tender Enquiry document for purchase of goods/stores/articles and related services as mentioned in "Request for Proposal (TENDER DOCUMENT)" which also indicates, inter alia, the required stores, delivery schedule, terms and conditions and place of delivery etc.

This section ("General Instructions to Bidders") provides the relevant information as well as instructions to assist -the prospective bidders 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 bidder and all subsequent correspondence and documents relating to the tender exchanged between the bidder and IMD, shall be written in English language.

3. Eligibility:

a) Bid is open to all manufacturers of weather radars in India who qualify as Class I local supplier or class II local suppliers. Purchase preference would be available for Class I local supplier as per the latest Government of India Procurement Policies:

"Class-I Local supplier" means a supplier or service provider, whose goods or service offered for procurement, has local content equal to or more than 50% as defined as prescribed in DIPP Order No.P- 45021/2/2017-PP (BE-II) dated 4th June, 2020 or by the competent Ministries/Departments in pursuance of this order.

"Class-II Local supplier" means a supplier or service provider, whose goods or service offered for procurement, has local content more than 20% but less than 50% as defined as prescribed in DIPP Order No. P- 45021/2/2017-PP (BE-II) dated 4th June, 2020 or by the competent Ministries/Departments in pursuance of this order.

"Local content" means the amount of value added in India which shall, unless otherwise prescribed by Nodal Ministry, be the total value of the items procured

(excluding net domestic indirect taxes) minus the value of imported content in the item (including all custom duties) as a proportion of the total value, in percent.

b) The prime bidder, hereinafter referred simply as the 'The bidder'. Bidders should not be associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by IMD to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods to be purchased under this Invitation of Bids.

c) Bidders who fulfill the Eligibility Criteria mentioned in Chapter-2, clause-5, will be considered for Technical Evaluation of bids.

d) Bidders should have proven capabilities in manufacturing Doppler weather radars.

e) Provisions of the Public Procurement (Preference to Make in India) order issued by the Department for Promotion of Industry and Internal Trade, Govt. of India, vide OM No. P-45021/2/2017-PP (BE-II) dated 4th June, 2020 and 16th September, 2020 shall be applicable in the tendering process.

f) As described in DIPP OM No. P-45021/2/2017- PP (BE-II) dated 15th June, 2017, "A supplier or bidder shall be considered to be from a country if
i) the entity is incorporated in that country, or
ii) a majority of its shareholding or effective control of the entity is exercised from that country; or
(iii) more than 50% of the value of the item being supplied has been added in that country. Indian suppliers shall mean those entities which meet any of these tests with respect to India."

4. Tendering Expense:

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

5. Pre-Bid Conference:

a) Pre-bid conference shall be held as per Notice Inviting Tender (NIT) schedule so as to provide an opportunity to the bidders to interact with India Meteorological Department (IMD) with regard to various tender provisions/clauses, before the bids are submitted.

b) Request for clarification during pre-bid, if any, may be sent by email latest by five working days before the commencement

of pre-bid meeting. Pre-Bid minutes shall be uploaded on e-procurement portal (**eprocure.gov.in/eprocure**).

c) Bidders are requested to attend or may depute their authorized representative for pre-bid meeting.

d) In case, due to the points/doubts raised by the prospective bidders, tender needs to be modified, the same will be considered for modification.

e) No change will be permissible after notification of pre-bid minutes

f) No reply in this regard shall be sent to individual bidders.

6. Regular inspection of website:

Prospective bidders are advised to visit Central Public Procurement (CPP) portal **eprocure.gov.in/eprocure** on regular basis for any change in NIT schedule like amendment / corrigendum in Tender Document including technical requirement and pre-bid minutes etc.

7. Amendments to Tender enquiry (TE) documents:

At any time, prior to the deadline for submission of tender, IMD may, for any reason deemed fit by it, modify the Tender Enquiry document by issuing suitable amendment(s) to it. The amendment will be uploaded on CPP portal **eprocure.gov.in/eprocure** only.

In order to provide reasonable time to the prospective bidders to take necessary action in preparing their tenders as per the amendment, IMD may, at its discretion extend the deadline for the submission of tenders and other allied time frames, which are linked with that deadline.

8. Documents Comprising the Tender:

The tender is to be submitted in Two Bid System. The "***Techno - Commercial Bid***" and "***Price Bid***" prepared by the bidder shall comprise the followings:

(A) Techno - Commercial Tender (Un-priced Tender)

The following documents are to be furnished by the bidder along with Technical Bid (Techno-Commercial Bid) as per the eligibility conditions applicable. Bidder shall upload following documents on CPP Portal **eprocure.gov.in/eprocure**

a) Registration certificate of bidding firm with any state and central government body of India. Credential/document shall be attached.

b) Checklist section (as per Annexure-I) properly filled, signed, and stamped.

c) Scanned copy of Earnest Money Deposit (EMD) in the form of Fixed Deposit Receipt/ Bank Guarantee (FDR/BG).

d) Original EMD in physical form shall be submitted to Central Purchase Unit, Office of DGM, IMD, on or before opening of tender.

e) Documentary evidence for fulfillment of Eligibility /Qualification criteria.

f) Certificate issued by competent authority from Ministry of MSME/ National Small Industries Corporation shall be uploaded on **eprocure.gov.in/eprocure** (CPP Portal) and original shall be submitted in Central purchase Unit of IMD on or before opening of tenders.

g) Tender terms & Conditions Acceptance Form (as per Annexure-II) duly signed and stamped.

h) Technical Bid duly signed and stamped on all pages.

i) List of deliverables (un-priced/without price) shall be submitted with details of make and model being offered etc. All should be similar to the items in price bid.

j) Pre-contract Integrity pact to be signed, stamped and shall be provided along with bid document (as per Annexure-IX).

k) The above documents must be signed (all pages), stamped and scanned & shall be attached in the beginning of technical bid.

(B) Price Bid

Price bid documents are to be furnished by the bidder as per following:

a) All pages of the price bid should be page numbered, indexed and signed with company/firm's seal by authorized signatory.

b) Price Bid shall be quoted as per price schedule format (Chapter-4).

c) Costing of each and every item, sub items offered in bidder's technical bid, shall be done with all breakup prices.

d) The bidder shall indicate on the Price Schedule specifying all components (main units and subunits etc. of each item) of prices shown therein including the unit prices and total tender prices of the goods (Hardware & Software), services, packing, inland transportation/freight/insurance to the

sites, GST or any other duties and taxes applicable against the requirement.

e) Successful bidder shall bear all the taxes (GST/IGST/SGST/Income-tax/WCT/or any other taxes) levied by the state / central government in force in India, as per the rates prevailing at the time of undertaking the job in accordance with the Income-tax Act.

f) Comprehensive Annual Maintenance Contract (CAMC) shall be only for the maintenance of stores (all equipment and software supplied by bidder only) therefore prospective bidders are advised to quote CAMC charges accordingly and specifically for seven years after the expiry of three years of warranty period. The charges are to be quoted for each year, on annual basis. Minimum amount cannot be less than 5% of the capital cost.

g) The reasonability of cost including the CAMC charges shall be a criterion in short listing the Bidders. Justification of CAMC charges with breakup need to be submitted along with the bid.

h) 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.

i) Bidder shall quote prices on F.O.R/FCA (at the sites of consignee) basis.

j) Statutory levies, taxes and duties etc., if any, chargeable on the goods are payable on actual basis as applicable.

k) If there is a discrepancy between the amount expressed in words and figures, the amount in words shall prevail.

Price bid shall summarily be rejected in case of any deviation from the un-priced bid given with the technical bid of the bidder.

Price bids shall not be accepted if CAMC charges are quoted in percentage.

9. **Signing and Submission of Tender:**

Properly signed and stamped tender on the company letterhead shall be uploaded online through CPP Portal, eprocure.gov.in/eprocure. **Hard copy of bids shall not be considered and accepted for submission of tender document.** The tender shall not contain any over writing. Only PDF format of

the tender shall be uploaded on CPP portal and will be treated as final version of the bid.

Note: One set of hard copy of the complete techno-commercial bid document which was uploaded during submission of tender is to be submitted before opening of the bid. If any discrepancy is noted between the softcopy uploaded and the hard copy of the tecno-commercial document, the soft copy will be considered as the final version for tender evaluation.

10. Alteration and Withdrawal of Tender:

a) The bidder after uploading its tender on CPP portal is permitted to alter / modify its tender within the deadline for submission of tenders.

b) Any discrepancy noticed in the hard copy and the soft copy of the bid submitted online by the bidder, the uploaded soft copy will be treated as final version of the bid for evaluation.

11. Opening of Tenders:

IMD will open the tenders 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 IMD, the tenders will be opened at the appointed time and place on the next working day.

Authorized representatives of the bidders may attend the tender opening process, provided they carry letter of authority from the respective bidders.

a) The Technical Bids are to be opened at the prescribed date and time. These bids shall be scrutinized and evaluated by the competent committee/ authority with reference to parameters prescribed in the TE document. During the Technical Bids opening, the tender opening official(s) will read the salient features of the tenders like delivery period, Earnest Money Deposit and any other special features of the tenders, as deemed fit by the tender opening official(s).

b) Thereafter, in the second stage, the Price Bids of technically qualified bidders only shall be opened for further scrutiny and evaluation on a date notified after evaluation of the techno commercial tender.

12. Scrutiny and Evaluation for acceptance of tender

(A) **Scrutiny of bids:**

The tenders will be scrutinized to determine whether they are complete in all respects and meet the essential important

requirements, conditions etc. as prescribed in the TE document.

The tenders are liable to be treated as non - responsive and will be summarily rejected if following are not essentially provided along with techno-commercial bids.

a) Registration certificate of bidding firm with any state and central government body of India. (Credentials/documents shall be attached).

b) Tender should be signed, stamped and complete in all respects. All documents shall also be digitally signed.

c) Properly signed and stamped checklist (Annexure-I) and fully completed compliance statement is to be enclosed.

d) Tender Acceptance Form (Annexure-II) to be duly signed and stamped. (i.e., all the terms & conditions of tender document are acceptable).

e) Tender validity for the required period.

f) Required EMD to be provided unless exempted.

g) Bidders' consent to provide the required performance security.

h) Copy of agreement of bidding firm from India with its foreign principal, if any, along with the precise relationship between them and nature of services which would be available from bidding firm in India, also to be attached with the tender.

(B) Technical Evaluation:

a) After the tender acceptance, tenders shall be evaluated to assess the technical suitability of the bid with respect to the terms and conditions of the RFP, by the committee constituted by competent authority.

b) If during the preliminary examination, IMD finds any minor deviations/irregularity and/or non-conformity regarding technical evaluation in a tender, IMD may waive the same provided it does not constitute any material deviation and has no financial impact and, also, does not prejudice or affect the ranking order of the bidders.

c) Wherever necessary, IMD will convey its observation on such 'minor' issues to the bidder seeking their response by a specified date. If the bidder does not respond by the specified date or provides evasive/incomplete reply without clarifying the exact point in clear terms, that tender will be liable to be ignored for further processing.

d) Technical presentation in the presence of the committee shall be held in IMD. The committee will seek proof of capabilities claimed in the compliance matrix provided by the respective bidder. IMD will seek clarifications on the design, performance and other technical points during the presentation. All points will be recorded.

(C) Financial evaluation:

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 after completion of evaluation of the techno commercial tender.

b) IMD shall evaluate the technically qualified financial bids for deciding lowest bidder (L-I) 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 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.

e) Purchase preference shall be given to all local suppliers in all procurement undertaken by the Purchaser (IMD) in the manner prescribed by the Department for Promotion of Industry and Internal Trade, Govt. of India, vide OM No. P- 45021/2/2017-PP (BE-II) dated 4th June, 2020. Purchase preference shall be given to Class I local suppliers in all procurements undertaken by the purchaser in the following manner:

- Among all qualified bids, the lowest bid will be termed as L1. If L1 is from a 'Class-I local supplier', the contract for full quantity will be awarded to L1.

If L1 bid is not a 'Class-I local supplier', 50% of the order quantity (this procurement being divisible in nature) shall be awarded to L1. Thereafter, the lowest bidder among the 'Class-I local supplier' will be invited to match the L1 price for the remaining 50% quantity subject to the Class-I local supplier's quoted price falling within the margin of purchase preference (20% as prescribed by DIPP OM dated 04.06.2020), and contract for that quantity shall be awarded to such 'Class-I local supplier' subject to matching the L1 price. This tender being for 03 radars, contract for 02 numbers of radars shall be awarded to Class-I Local-supplier and 01 number to Class-II Local supplier.

In case such lowest eligible 'Class-I local supplier' fails to match the L1 price or accept less than the offered quantity, the next higher 'Class-I local supplier' within the margin of purchase preference shall be awarded accordingly. In case some

quantity is still left uncovered on Class-I local suppliers, then such balance quantity may also be ordered on the L1 bidder.

13. Packing and Marking:

The packing for the goods provided by Successful bidder should be strong and durable enough to withstand, without limitation, the entire journey during transit including transshipment (if any), rough handling, open storage etc. without any damage, deterioration etc.

14. Inspection, Testing and Factory acceptance test (FAT):

a) IMD reserves the right to inspect goods at factory site/supplier site before their dispatch if required and mentioned in technical requirement (TENDER DOCUMENT) section.

b) FAT shall be undertaken by IMD for all the radars manufactured and to be delivered, based on mutually acceptable terms and condition. FAT may be conducted in lots if required.

c) Goods accepted by IMD/consignee and/or its inspector at initial inspection shall in no way dilute purchaser's/ consignee's right to reject the same later, if found deficient in terms of the clauses of the contract.

d) The equipment will be accepted subject to final inspection and test on commissioning and before handing over the equipment to consignee at the site.

e) During FAT, cost of travel, per diem charges and charges for boarding/lodging for IMD personnel (Maximum 5 persons) will be borne by IMD, Government of India.

CHAPTER-2

Conditions of Contract (CoC)

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

NOTE: *Whenever there is any conflict between the provisions in the GCC regards to specific Para under "List of requirements/ technical specifications", the provision contained in the "List of requirements/ technical specifications" shall prevail and have an over-riding effect.*

Any Special instructions as per "List of requirements/ technical specifications" section will also apply for this purchase.

The conditions (like qualification criteria, delivery schedule, mode of delivery & sites of delivery etc.) mentioned in "List of requirements/ technical specifications section" etc. will also apply for this purchase.

The date of installation of each Radar at different places may vary and accordingly its commissioning date may very which will result in different warranty period and different CAMC period of all 8 Radars. This factor shall be taken into account while devising the contract clause, warranty clause, CAMC clause and especially in the payment terms and conditions as mentioned in RFP.

1. **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.

2. **Purchaser's Right to accept any tender and to reject any or all tenders:**

   IMD 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.

3. **Tender Fee:**

   No tender fee is charged on the downloaded and e-tenders.

4. **Price preference**:

   a) Price preference shall be given to Micro and Small Industries registered as manufacturers for weather radar equipment as per requirement of tender document with National Small

Industries Corporation or any other government agencies as per the latest guidelines/orders from Government of India.

b) Purchase preference and quantity etc. shall be decided as per the Government of India orders.

c) The bidders shall have to upload and submit the copy of valid registration certificate. Micro and small Enterprises are exempted from submitting fees/cost towards tender document and submission of earnest money deposit (EMD), also known as security deposit.

d) Micro and small Enterprises are not exempted for performance security or Bank Guarantee (BG) and have to furnish performance security if contract is awarded to them. There is no relaxation in this regard.

5. **Qualification criteria for Bidders**:

I. **Eligibility**

The Bidder should not be blacklisted by any Central/State Government Department/Organization/PSU as on the date of submission of bid. Undertaking as per Annexure-XI of Chapter-5 to be submitted.

II. **Manufacturing capability**

Along with all the necessary documents/certificates required as per the tender conditions, the bidder should furnish a brief write-up, backed with adequate data, explaining his available capacity (both technical and financial), for manufacture and supply of the required goods/equipment, within the specified time of completion after meeting all their current commitments.

Supporting documents submitted by the bidder must be certified as follows:

All copies of supply/work order/contract agreement/ respective completion certificates and contact details of clients; documents issued by the relevant Industries Department/National Small Industries Corporation (NSIC)/manufacturing license; annual report, etc.,

III. **Creditworthy report**

The Creditworthy Report of the OEM / Principal supplier for the Current Financial Year is to be enclosed along with the Technical Bid with The minimum rating for Financial Qualification to be Rating-Ba.

The creditworthy report obtained from a reputed and Govt. of India recognised firm shall only be acceptable. However, report should have been obtained after 31st March, 2021.

IV. **Experience and Past Performance:**

The Bidder should satisfy any one or more of the following criteria to qualify.

'The bidder' shall be a weather Radar manufacturer in India and should have manufactured at least one Radar during the last ten years ending on closing date of this tender. Documentary proof shall be submitted along with the tender.

OR

Bidder shall be a manufacturer and integrator in India of major subsystems like transmitter (high power SSPA), RF Receiver, digital systems and receiver (Three Channel IF Processing), signal processing systems (Hardware and software), Servo system, Antenna & Mechanical system etc. for Doppler Radar system, designed and developed in India. Documentary proof shall be submitted along with the tender.

In support of experience, past performance and capacity/ capability should be authenticated by the person authorized to sign the tender on behalf of the bidder. Original Documents must be submitted for inspection, if so demanded.

V. **Financial Standing - under all conditions**

Bidder should submit individual statement confirming compliance to all of the following with documents.

a) The average annual financial turnover of 'The bidder' during the last three years, ending on '31st October, 2021', should be at least Rupees twenty crore (Rs. 20 Crore) per annum. In this regard audited annual balance sheet and profit or loss statement/reports, duly authenticated (by a Chartered Accountant/Cost Accountant) of last three consecutive years shall be submitted along with technical bid. The profit/loss statement should categorically indicate profit or loss for each year.

b) Bidder firm should not have suffered any financial loss for more than one year during the last three years, ending on the 31st October 2021'.

c) The net worth of the Bidder firm should not be negative on 31st October 2021 and also should have not eroded by more than 30% (thirty percent) in the last three years, ending on 31st October 2021.

d) Bidders who have been restructured by Banks in India, under the statutory guidelines, they would be deemed to have qualified the financial standing criteria considering the institutional financial backing available to them.

VI. **Applicability in Special Cases:**

a) Applicability under 'Make in India'

(I) Bidders who have a valid/approved ongoing 'Make in India' agreement/program with Government of India and who, while meeting all other criteria above, would also be considered to be qualified provided:

i. Their foreign "Make in India" associates meet all the criteria above without exemption, and
ii. The bidder submits appropriate documentary proof for a valid/approved ongoing 'Make in India' agreement / program.
iii. The Bidder furnishes along with the bid, a legally enforceable undertaking, jointly executed by himself and principals, for manufacture, supply (and erection, commissioning) and performance of the product offered including all warranty obligations as per the general conditions of contract.

(II) As prescribed by the Department for Promotion of Industry and Internal Trade, Govt. of India, vide OM No. P- 45021/2/2017-PP (BE-II) dated 4th June, 2020, bidder shall be required to provide following (at the time of bidding) for verification of local content:

1. The 'Class-I local supplier'/ 'Class-II local supplier' at the time of tender, bidding or solicitation shall be required to indicate percentage of local content and provide self- certification (**as per Annexure-XIII)** that the item offered meets the local content requirement for 'Class-I local supplier'/ 'Class-II local supplier', as the case may be. They shall also give details of the location(s) at which the local value addition is made.
2. In cases of procurements for a value in excess of ₹10 Crores, the 'Class-I local supplier'/ 'Class- II local supplier' shall be required to provide a

certificate from the statutory or 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) giving the percentage of local content.

6. **Contact Details:**

The complete name and address of the Indian bidding firm along with permanent income tax account number (PAN) as allotted by the Indian Income Tax authority must be submitted.

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

a) The bidder shall furnish along with its tender, earnest money for an amount as shown in the tender notice.

b) The bidders who are registered as Micro and small Enterprises specified by Ministry of Micro, Small &Medium Enterprises (MSME) only for the specific item and services being procured under this tender are exempted from EMD.

c) The EMD shall be furnished in Fixed Deposit Receipt (FDR) or Bank Guarantee (BG) (as per Annexure-III) from any Nationalized bank in India.

d) The earnest money shall be valid for period of sixty (60) days beyond the validity period of the tender.

8. **Refund of EMD:**

a) EMD of the unsuccessful bidders will be returned to them without any interest, after expiry of the tender validity period.

b) EMD of the successful bidder will be returned without any interest, after receipt of performance security from the successful bidder.

c) Successful bidder shall submit pre-receipt for obtaining back their security.

9. **Forfeit of EMD:**

a) 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 IMD.

b) 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.

c) Firm shall have to extend the validity of EMD if extension of tender validity is agreed on the request of purchaser in exceptional cases.

10. **Performance Security**:

A. Submission

Successful bidder shall submit performance security as per Annexure-IV, within thirty (30) days from date of dispatch of supply order/award of contract by IMD or within twenty-one (21) days from the receipt of supply order by Successful bidder whichever is earlier.

a) IMD may consider annulment/cancellation of supply order/ award of contract if performance security not received in stipulated time.

b) There is no relaxation/exemption in submitting of performance security.

c) Successful bidder shall furnish performance security to IMD for an amount equal to ten percent (10%) of the total value of the contract excluding CAMC, if any, valid up to sixty (60) days beyond the warranty period.

d) For CAMC, the prime Bidding Firm shall furnish performance security to IMD for an amount equal to five per cent (5%) of the total value of the CAMC, valid up to sixty (60) days after the date of completion of all contractual obligations of CAMC by Successful bidder/service provider (TO BE SUBMITTED 30 DAYS BEFORE COMPLETION OF WARRANTY PERIOD).

e) Performance Security has to be submitted irrespective of its registration in NSIC etc.

f) Performance security is not relaxed to any bidder.

g) Performance Security shall be in any one of the articles namely FDR or BG drawn / issued by a Nationalized bank in the prescribed form, in favour of IMD.

h) In the event of any amendment issued to the contract, Successful bidder 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.

B. Refund

IMD will release the already submitted valid Performance Security without any interest to Successful bidder/service provider on completion of Successful bidder's all contractual obligations including the warranty and CAMC obligations.

Successful bidder shall submit pre-receipt for obtaining back their security.

11. Terms of Delivery:

a) Goods shall be delivered by Successful bidder in accordance with the terms of delivery schedule specified in the contract on FOR basis.

b) Bidder/bidders should not deliver the goods after the valid delivery period unless a prior consent has been obtained from the competent authority of IMD.

12. Delivery schedule:

a) As per "List of Requirements" under TENDER DOCUMENT-The Date, on which all the stores as per contract agreement have been installed and commissioned at each site of IMD shall be treated as the 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 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.

13. Force Majeure:

a) Force Majeure means an event beyond the control of Successful bidder and not involving Successful bidder's fault or negligence, and which is not foreseeable. Such events may include, but are not restricted to, acts of IMD 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, lockdown, lockouts, and freight embargoes.

b) If there is delay in performance or other failures by Successful bidder to perform its obligation under its contract due to event of a Force Majeure, Successful bidder shall not be held responsible for such delays/failures.

c) If a Force Majeure situation arises, Successful bidder shall promptly notify IMD in writing of such conditions and the cause thereof within twenty-one days of occurrence of such event.

d) Unless otherwise directed by IMD in writing, Successful bidder 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.

e) If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of Force Majeure for a period exceeding sixty days, either party may at its option terminate the contract without any financial repercussion on either side.

f) There may be a Force Majeure situation affecting the purchase organization only. In such a situation the purchase organization shall take up with Successful bidder on similar lines as above for further necessary action.

14. Warranty:

a) The warranty shall be on-site warranty for 03 years. The quoted rate shall deem to include the same.

b) All supplied stores should be free from all defects and faults in material workmanship and manufacture.

c) Goods 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 as per rated parameters mentioned in this RFP.

d) Successful bidder shall be bound to furnish a clear written warranty.

e) Successful bidder will be required to replace defective goods at site, free of cost inclusive of all freight and handling charges.

f) Successful bidder shall provide warranty certificate from the OEM for the goods along with date of manufacturing of stores/products.

g) Successful bidder shall take over the replaced parts/ goods after providing their replacements and no claim, whatsoever shall lie with IMD for such replaced parts/goods thereafter. This excludes any hard disks / flash disks or storage media that contains any data of IMD.

h) Custom duty charges, if any, for re-export/re-import of defective parts/repaired parts or replaced parts to the foreign supplier/bidder country for repairs etc shall be borne by bidder only.

i) Transportation cost for sending defective parts for repairs and sending back repaired or replaced one to IMD site(s), shall be borne by the bidder itself.

j) Warranty shall be quoted as per IMD requirements i.e., three years after commissioning of the individual Radars, otherwise the Bid shall be considered as unresponsive.

k) Other condition, if any, under warranty clause of "List of requirements/ technical specifications" section shall also be applicable.

l) The maximum down time permissible is 5 days in each quarter/ 90 days, excluding period for preventive maintenance, for each radar.

15. Comprehensive Annual Maintenance Contract (CAMC) for Equipment and Software

a) IMD/Consignee reserves the rights to enter into Comprehensive Annual Maintenance contract between Consignee and Successful bidder after the completion of warranty period.

b) CAMC shall be for the maintenance of stores (all equipment and software supplied by the bidder only). Prospective bidders are advised to quote accordingly and specifically.

c) Payment for maintenance contract is made on quarterly basis unless it is specified otherwise in the technical section.

d) As per IMD requirements, year wise CAMC shall be quoted for 07 years after completion of 03 years warranty period, otherwise the Bid shall be considered as unresponsive. The minimum quote for each radar, shall not be less than 5 % of the total cost of the complete system installed at respective sites.

16. Penalty clause/Liquidated damages clause (LD) for delayed delivery of stores & Services:

a) Successful bidder shall deliver the goods and perform the services (delivery, installation, acceptance, and commissioning) under the contract within the time schedule specified by IMD in the "List of requirements/ technical specifications" section and as incorporated in the supply order.

b) The delivery date shall be considered as the date on which all the items/stores/materials/services etc., have been delivered as per contract-agreement/Supply/Purchase order. Any delay shall be taken into account for penalty/LD purpose as per term/conditions of the contract.

c) Penalty/Liquidated damages shall be calculated on the total contract price including the element of taxes etc., mentioned in the price bids.

d) IMD shall, without prejudice to other rights and remedies available to IMD under the contract, deduct as penalty/liquidate damage from the contract price, a sum equivalent to 0.5% (half percent of cost of stores) per week of delay or part thereof on delayed supply of goods and/or delayed services in deviation to the milestone in Delivery Schedule, mentioned elsewhere in the document, subject to a maximum of 10% of the total contract value.

e) L/D shall not be imposed under force majeure conditions.

f) Once the maximum is reached IMD may also consider following:

i. Forfeiture of the performance security.

ii. Termination of the contract for default.

iii. Blacklisting of the firm, if the firm will not adhere to the IMD terms and conditions of the contract.

g) Successful bidder shall not be held responsible for delay in delivery of stores and their installation under the following reasons:

i. Delay in providing Entry permits/Road Permits (if required) to Successful bidder by IMD.

ii. Delay in providing proper site(s) by IMD to Successful bidder, for installation of stores. Facilities required for project to be provided to Successful bidder by IMD.

iii. Delay in providing No Objection Certificate (NOC), required from any other government agency/agencies.

iv. Due to delay in any or all the above conditions the prescribed date of delivery shall be extended by the number of days of delay.

h) Successful bidder shall inform to IMD directly in writing regarding any delay on part of IMD.

17. Award Criteria and Tolerance Clause:

a) The purchase order /supply order shall be awarded to the eligible responsive BIDDER tender, evaluated as the most economical, technically qualified, and suitable to the requirements.

b) IMD shall reserve the right to increase/decrease the ordered quantity by 30 (Thirty) percent at any time, till final delivery date (or the extended delivery date of the contract) at the same price with same terms and conditions subject to approvals from competent authority, by giving reasonable notice even though the quantity ordered initially has been supplied in full before the last date of the delivery period (or the extended delivery period).

18. Modification of contract:

a) If necessary, during the period of the contract, IMD may amend the contract, by making alterations and modifications within the general scope of contract and issue a written amendment in this regard to Successful bidder at any time.

b) If Successful bidder doesn't agree to the adjustment made by IMD, Successful bidder shall convey its views to IMD, within

fifteen (15) days from the date of Successful bidder's receipt of IMD's amendment / modification of the contract.

c) The successful Bidder shall sign a contract agreement with IMD as per terms and conditions specified in the RFP. The format of the Agreement will be provided after finalization of successful Bidder.

19. Taxes and Duties in India:

a. Duties and Local Taxes:

i. Bidder shall pay Work Contract Taxes (WCT), GST/IGST/SGST/ Service Tax and other taxes where applicable as per existing rules at that time.

ii. 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 such exemption only on production of such exemption certificate from any authorized officer.

iii. Bidders 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.

iv. Exemption certificates will be issued by the department to avoid payment of such local taxes or duties, however if not accepted by any agency the payment will be reimbursed on production of original receipts.

v. Successful bidder shall pay the Octroi, entry tax etc. if exemption certificate not agreed by local authorities and same may be got reimbursed from IMD on proof of payments to avoid delay in the supply of stores.

Note: *All payments due under the contract shall be paid after deduction of statutory levies at source (like ESIC, IT (TDS), GST, LBT / Octroi etc.), wherever applicable.*

b. Supply of Road Permits by the indenter /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. Successful bidder shall request the indenter/consignee for providing Road permit within 10 days of the signing of contract agreement/receipt of the Supply order.

ii. Successful bidder shall furnish all the necessary information and documents in this regard to consignee.

iii. On receipt of the above request from Successful bidder, IMD concerned shall arrange to provide the Road permit/way Bill in the prescribed form to Successful bidder within a maximum period of two weeks so that the same reaches Successful bidder before the dispatch of the stores,

iv. However, in cases where the Road permit/Way Bill is issued on proof of actual invoice of the material, IMD shall arrange to provide the Road permit/way Bill from appropriate authorities within a maximum period of 10 days from the receipt of invoice.

v. Successful bidder shall not be held responsible for any delay in supply due to non- supply/delayed supply of Road permit.

C. Income Tax and service tax etc:

i. Tax deducted at source (TDS) shall be done before making payment to Successful bidder as per existing law in force. The bidder may visit website of Income Tax Department of India for details of Tax Liabilities, Rules, and Procedures etc.

ii. The bidders shall have to provide their Permanent Income Tax Number (PAN), TAN and GST registration number.

20. Terms and Mode of Payment:

a) **Payment towards Supply, installation, and commissioning of the systems: -**

I. Payment, as per term 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.

II. Sixty percent (60%) of total contract value will be paid after receipt of goods at site, Forty percent (40%) payment towards stores after successful installation, test runs, completion of training, commissioning, and acceptance of the system at each site including the period of endurance test of individual site.

b) **Payment towards Comprehensive Annual Maintenance Contract Charges:**

i. IMD will enter into CAMC agreement along with the SLA with Successful bidder at the rates as stipulated in the contract, after warranty period.

ii. The payment of CAMC will be made after satisfactory completion on quarterly basis as per TENDER DOCUMENT terms and duly certified by IMD.

iii. Successful bidder shall send its claim for payment in writing, when contractually due, along with relevant documents etc., duly signed with date, to IMDs.

C) Following documents shall be submitted along with the Bills:

i. Three copies of supplier's invoice showing contract number, goods description, quantity, unit price and total amount.

ii. Consignee Receipt Certificate in original issued by the authorized representative of IMD.

iii. Copies of delivery Challan identifying contents of each package.

iv. Inspection certificate by the nominated Inspection agency, if any. Insurance Certificate.

v. Final Acceptance Report from consignee.

vi. Bills/invoices must be submitted separately for stores and services.

vii. The bidder shall submit particulars of his bank account required for making payments.

(a) Account Number **(b)** Bank Name **(c)** Branch Name **(d)** Address **(e)** IFS code **(f)** MICR No. **(g)** Telephone No. **(h)** SWIFT code etc.

21. <u>Termination of tender by IMD:</u>

a) From the time of submission of tender to the time of awarding the contract, if a bidder/firm needs to contact IMD for any reason relating to this tender enquiry and/or its tender, it should do so only in writing.

b) In case a bidder/firm attempts to influence IMD in IMD's decision on scrutiny, comparison & evaluation of tenders and awarding the contract, the tender shall be liable for rejection in addition to appropriate administrative actions being taken against that bidder, as deemed fit by IMD.

c) IMD, without prejudice to any other contractual rights and remedies available to it (IMD), may, by written notice of default sent to Successful bidder, terminate the contract in whole or in part, if Successful bidder 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 IMD.

d) In the event of IMD terminating the contract in whole or in part, IMD may procure goods and/or services similar to those cancelled, with such terms and conditions and in such manner as it deems fit and Successful bidder shall be liable to pay IMD for the extra expenditure, if any, incurred by IMD for arranging such procurement.

e) If Successful bidder becomes bankrupt or otherwise insolvent, IMD reserves the right to terminate the contract at any time,

by serving written notice to Successful bidder without any compensation, whatsoever, to Successful bidder, 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 IMD.

22. Arbitration clause:

a) If dispute or difference of any kind shall arise between IMD and Successful bidder in connection with or relating to the extension of contract, the parties shall make every effort to resolve the same amicably by mutual consultations.

b) 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 the "List of requirements/ technical specifications" section either IMD or Successful bidder 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.

c) In the case of a dispute or difference arising between IMD/ Consignee and all bidder/suppliers relating to any matter arising out of or connected with the contract, such dispute or difference shall be referred to the independent arbitrator appointed by the Director General of Meteorology.

d) The award of the arbitrator shall be final and binding on the parties to the contract.

e) Each party shall bear its own cost.

23. Venue of Arbitration:

a) The venue of arbitration shall be the place from where the contract has been issued, i.e., New Delhi.

b) The contract shall be interpreted in accordance with the laws of India.

24. List of Deliverables:

a) The bidder shall submit the final list of Deliverables as given at Annexure-VI for all the stores, Hardware, Software items, subunits etc and all other services which the bidder is going to offer in their technical proposal to meet the requirements under "List of requirement & Technical specifications" of this tender document.

b) The items to be delivered shall be same as submitted in the price bid.

c) The price bid shall not be considered if it is not matching with the list of deliverables submitted with technical-commercial bid document.

Note: It is mandatory to mention the details of offered stores /items.

25. **Terms & Conditions of Comprehensive Annual Maintenance Contract (CAMC):**

a) The CAMC includes all equipment installed at each site, equipment installed at control center and inclusive of all computers, peripherals, printers, radar and equipment spares, components, cables, connectors etc and radar related materials like UPS, DG, Radome, Tower, etc.

b) The removed/replaced defective material becomes the property of Successful bidder. This excludes any hard disks / flash disks or storage media that contains any data of IMD.

c) The CAMC clause will be applicable for control center and equipment at individual radar sites.

d) The CAMC will commence immediately after the expiry of the warranty period.

e) The comprehensive maintenance contract includes preventive and corrective maintenance and free replacement of all types of the defective parts/devices.

f) Bidder should submit a detailed CAMC plan including preventive maintenance schedules for each site.

g) The Successful bidder shall provide the details of its call center meant for booking the complaints along with the contact numbers like mobile nos., phone nos., mail address and names etc of its service engineers.

h) The radar shall be decommissioned for a period of two weeks for annual preventive maintenance and upkeep in a cyclic mode.

i) The Successful bidder's engineers attending to the system are required to make all entries of their work done and corrective measures taken by them with their signatures in the log book kept with the Radar station.

j) During CAMC overall uptime of the system shall be at least 85 days in a quarter of 90 days.

k) If there is a failure of the system for more than the criteria stipulated in (j) above then LD will be applicable at the rate of 0.5% per day (calculated for CAMC value of that station) and part there of subject to maximum of 10% of CAMC charges for that quarter.

l) If the total failure duration (CONTINUOUS OR INTERMITTENT) extends beyond one month then the contract may be terminated at the discretion of competent authority of IMD and cost of its repair from alternate source will be recovered from the "Bidder" and performance security may be forfeited.

m) Maximum two weeks shutdown for annual maintenance shall not come under the clause.

n) Radar down time due to external factors and severe natural calamity beyond human control shall exempt the penalty criteria as in clause (k) above.

o) Supplier shall deploy trained manpower at each site preferably Graduates in Engineering in Electrical / Electronics / Communication for operational and maintenance for round the clock support.

p) Date of commencement of preventive maintenance period of the individual radars shall be fixed by mutual consultation with IMD.

q) The mode of payment will be quarterly and will be made after end of each quarter on the basis of satisfactory performance certificate from UAID, IMD at New Delhi.

r) Successful bidder will assist IMD for regular backups of all the software.

s) The Successful bidder is also required to restore the existing Software from the Backups whenever required.

t) Successful bidder will also be responsible for configuring the networking components.

u) CAMC contract will be signed with a validity for seven years and renewed annually based on satisfactory performance. If required, contract may be extended by IMD. However, IMD reserves the right to terminate the contract at any time by giving three months of notice, if the performance of the system or the services rendered by Successful bidder is not found satisfactory.

v) The Successful bidder has to submit an undertaking that it will not use IMD's data for any commercial purpose as per Annexure-XIV.

w) Data of radar will not be copied or transmitted without permission from IMD.

x) This contract shall be governed in all respects by Indian Laws.

CHAPTER-3

Schedule of requirements specifications & allied technical details.

1. **GENERAL REQUIREMENT:**

The specifications described herein refer to C-Band Dual Polarized Solid State Power Amplifier (SSPA) based Doppler Weather Radar including all peripherals, hereafter referred to as "The System". The System shall be capable of detecting and estimating meteorological parameters of severe weather phenomena that cause widespread damage to life and property. The Bidder shall submit their bids for three (03) numbers of C-Band SSPA based Dual Polarization Doppler Weather Radars as per IMD tender requirement.

The project is to be executed on a turnkey basis and all items shall be supplied, installed, and commissioned within the stipulated time as mentioned in the original document.

a) All the DWR systems to have following latest state of the art facilities for smooth operation of complete radar system and its accessories:

i. The system will have dual polarization capability by simultaneous transmission and receive in both linear Horizontal and Vertical polarization.

ii. The system shall have user selectable Single polarization and Dual polarization mode of operation.

iii. The entire operation of the System shall be fully computer controlled and remotely manageable.

iv. Communication hardware and accessories for data transfer to central location.

v. Latest state of the art computer system shall be used for the generation of data and its processing. At the time of supply of the stores, the latest state of art computer system and latest version of software shall be provided for the generation of data and it's processing, with OEM Licensed Version of Linux / Windows Operating System.

vi. Facility for radar data analysis and products generation at each of the sites inclusive of automatic dissemination of warnings and alerts are to be provided by the bidder.

vii. Display of data such as reflectivity, rainfall rate, horizontal winds at designated height, warnings etc., to be overlaid on GIS map.

viii. GIS based display should be accessible over the network through VPN or Internet.

ix. Web access to GIS based radar data display to be provided using web browsers such as Microsoft Internet Explorer, Firefox, Chrome etc.

x. Central server at Delhi for processing the radar data from all three radars to be provided.

xi. All equipment shall be of industry standard so as to enable easy up-gradation and maintenance.

xii. Standard software shall be offered for radar data processing and display and should be in use in any operational weather services in the world to fulfill the functional requirements along with capabilities which have been specified elsewhere in detail.

xiii. Diesel generator of minimum 20 KVA or suitable capacity required for continuous operation of entire DWR system including cooling system, along with minimum 100 L capacity fuel tank. Diesel generator shall have automated switching on and off feature in the event of normal electricity failure and resumption.

xiv. Two online UPSs, in redundant mode and each with minimum capacity of 15 KVA each or suitable capacity required for continuous operation of entire DWR system, along with separate battery banks. Each UPS should have at least 30 minutes power back-up and should be capable of taking the full load of radar.

xv. The supplied DG Set, UPS etc., should have CAMC/AMC service support facility in India.

xvi. NTP clock based on GPS for system clock time synchronization of the radar and the connected computers in the radar network.

xvii. The tentative locations for installation of the systems are mentioned in Annexure-VIII.

xviii. Installation of radar system will be on steel tower structure fabricated using hot dipped galvanized steel, at site. The standard of the steel and fasteners shall be certified for use in saline environment specified in Indian standard specification manual and specified explicitly. The specification shall meet minimum IS2062:2011 E250 Grade-C Steel for Channels and plates and IS1161:2014 & IS10748:2004 YST 310 grade steel for hollow pipes, IS1367 Grade8.8 for

fasteners from reputed manufacturers and their details also shall be submitted.

xix. The tower structure shall be with height of 20m.

xx. For evaluation of tender, cost of the tower will be considered.

xxi. Appropriate cemented reinforced concrete base, leveling arrangement.

xxii. Bidder shall submit the full details of the hardware, including model numbers and the software proposed to be employed for meeting the requirements given herein.

xxiii. The Bidder has to clearly specify the way of achieving the sensitivity & detection capability (with ref. to OVERALL SYSTEM REQUIREMENTS) with supportive documents of claim and appropriate calculations for SSPA (three IF channel processing) transmitters. The calculations for achieving the required operational characteristics such as scanning capabilities, maximum range, maximum velocity, sensitivity, and clutter suppression have to be provided. Confirmation with supporting images, test printouts etc., are to be provided.

xxiv. Lightning protection is to be provided for ensuring safety of the system and all tower mounted elements by the way of grounding cable through ground bar or other best suited mechanism.

xxv. IMD will take possession after appropriate test and evaluation meeting the specifications and accept the radar system after commissioning.

xxvi. It is the responsibility of the bidder to bear all the expenditure to operate the radar including manpower requirements, security and all radar peripherals till successful acceptance and commissioning.

xxvii. Transportation from the factory to the site will be the responsibility of the bidder.

xxviii. The entire work of installation and commissioning of the radar has to be carried out by the successful bidder.

xxix. The network link between the systems and central server will be provided by IMD; firm shall suggest suitable bandwidth for real time system control, monitoring and near real-time receipt of data at central locations for generating composite images and products of all the radars.

b) The price bids of technically qualified firms shall be opened for evaluation on a date notified after evaluation of the technical bid.

IMD shall evaluate the price bids of technically qualified bidder for deciding lowest bid (L-1) on the basis of total landed cost at site including cost of all the deliverables as per tender document and all prevailing taxes and duties and any other charges as demanded by the bidder.

2. OVERALL SYSTEM REQUIREMENTS:

IMD requires C-Band Dual Polarized Doppler Weather Radar Systems with Solid State Power Amplifier (SSPA) based transmitter as mentioned in Table-1

TABLE-1: Technical Specification

	General	
2.1	**Range of observation**	450 Km (Reflectivity) 250 Km (Velocity, Spectrum Width)
2.2	**Range resolution**	150 m or better
2.3	**Max. Unambiguous Range**	250 km or better; consistent with PRF & 2ndtrip echo recovery
2.4	**Unambiguous Velocity(Minimum)**	30 m/s or better at 250 km, 60 m/s or better at 125 km with velocity ambiguity resolver
2.5	**Detection capability**	13 dBZ or better at 230 km range
2.6	**VSWR**	1.3:1
2.7	**Scan Time**	10 elevation volume scans from -2deg to 30 deg with all base moments acquired in 8-minutes or better consistent with accuracy stated in section 2.44.
	Transmitter	
2.8	**Transmitter Type**	High power Solid State Power Amplifier (SSPA)
2.9	**Frequency Range**	5.45 GHz - 5.65 GHz
2.10	**Transmitted power**	Required to meet 13 dBZ at 230 Km as per Point No.2.5.
2.11	**Pulse repetition frequency**	To meet Range and Velocity requirement as per Points No. 2.3 & 2.4
2.12	**Pulse width**	NLFM based pulse width required to match the range of observation and detection with Range side lobe less than 35dB.
2.13	**Transmitter Polarization**	Horizontal, Vertical, STAR (Simultaneous Transmit & Simultaneous Receive)
2.14	**VSWR**	1.3:1
2.15	**Safety Feature**	All necessary interlocks, status parameters and Analog parameters monitoring, and logging should be

		incorporated for the safety of the subsystem and the personal. System should have the feature of blanking RF radiation for selective sector.
	Antenna, Radome & Tower	
2.16	**Antenna**	Parabolic Dish Antenna
2.17	**Side lobe**	27 dB down from the main lobe to 12° and beyond 12° better than 30 dB.
2.18	**Beam width**	1° or better
2.19	**Azimuth steering**	360° with ±0.05° steps and 0-6 rpm
2.20	**Vertical Steering**	-2° to +92° or better with ±0.05° steps
2.21	**Polarization**	Horizontal, Vertical and STAR mode
2.22	**Pointing accuracy**	0.1° (Tower deflection + Servo stability together)
2.23	**Pointing resolution**	0.01° or better
2.24	**Scanning rates**	Up to 6 rpm
2.25	**Cross Polar Radiation**	better than 36dB
2.26	**Azimuth velocity**	operation mode: from 3°/sec (0.5 rpm) to 36°/sec (6 rpm) in both Clock-wise (CW) and Counter Clock-wise (CCW) directions. calibration mode: from 0.6°/sec (0.1 rpm) to 36°/sec (6 rpm) in both Clock-wise (CW) and Counter Clock-wise (CCW) directions.
2.27	**Elevation velocity**	**operation mode:** from 3°/sec (0.5 rpm) to 18°/sec (3rpm) in both up and down directions **calibration mode:** from 0.6°/sec (0.1 rpm) to 18°/sec (3rpm) in both up and down directions
2.28	**Acceleration in AZ & EL axes**	Minimum 10°/sec^2 during scan operation, should meet scan time specified in 2.7.
2.29	**Angular data resolution in AZ & El axes**	0.01° or better using 21 bits or better absolute angle Encoder
2.30	**Power handling**	To meet the specification 2.9
2.31	**Operating modes**	**Standby mode**: System Power ON **Operate mode**: Scan (With specified velocity magnitude and sign) or Pointing mode (specified reference position). Scan of 0.5 to 6 RPM in Azimuth. Volume scan, azimuth sector scan, elevation sector scan (RHI scan), Designate mode and computer designate mode. **Calibration Mode**: Provision for pointing & follow the Sun for Sun

		calibration, follow any trajectory precisely in External computer Designate Mode for balloon calibration and bore sight calibration for Antenna pattern measurement. Scan of 0.1 to 6 RPM in Azimuth. **Diagnostic Mode**: Provision to diagnose important functionality.
2.32	**Tower height**	a) 20 m nominal height. Tower structure should withstand 250 kmph (Survival/operational requirement). b) The tower design should support overall pointing accuracy specified in 2.22 at wind speed of at least 130 kmph (Operational requirement). c) The structural design should be certified by a competent third-party authorized agency.
2.33	**Scan strategy**	Different scan strategies in a scheduler. Automatic change over between different scan strategies shall be possible.
2.34	**Radome**	a) Type: Rigid spherical in shape (curved panels), Installed on top of the building, covering antenna dish and pedestal, with adequate space for maintenance personnel to enter and work with roof fetch. b) Transmission Loss: better than 0.2 dB one way.
2.35	**Wind load**	Up to 250 km/hr.
2.36	**Lightening Protection**	Lightening rod with dual ground wires. Aviation warning Lamp attached to the lightening arrester. Suitable to the site selected.
2.37	**Obstruction / Avionic lights**	Twin Light (LED) System with solar powered & auto switch ON/OFF.
	Receiver	
2.38	**Type**	Multichannel Digital receiver for Dual Polarization (H&V), STAR mode operation or suitable for SSPA based Transmission and reception. Provision to sample Transmitter pulse for matched filtering.
2.39	**Noise figure**	3 dB or better
2.40	**Linear dynamic range**	95 dB or better

2.41	**Minimum Discernable Signal**	-108 dBm or better @2MHz Bandwidth at IF signal output i.e., Signal Processor input).
	Radar Signal Processor	
2.42	**Doppler processing**	Pulse Pair and FFT selectable
2.43	**Clutter suppression**	a) Clutter Elimination for ≥40 dB. b) The system shall have provision for identifying and filtering non-meteorological echoes such as, Sea clutters, bird/insects, chaffs, etc. based on polarimetric measurements.
2.44	**Parameters to be measured and displayed**	**a) Reflectivity (Z_H & Z_v)** Max: 65 dBZ or better Resolution: 0.01 dB Accuracy: ⩽ 1dB @ SNR>10dB; r=230Km; Δr<900m **b) Radial velocity (V_H)** Max: ±30m/s Resolution: 0.1 m/s Accuracy: ≤1m/s @SNR >10dB; σ_v=4m/s, r= 230Km; Δr<300 m **c) Spectrum Width (σ_H)** Max: 10m/s Resolution: 0.1 m/s Accuracy: ≤2m/s @SNR > 10dB; r=230Km; Δr<300 m **d) Differential reflectivity (Z_{DR})** Dynamic range : -5 to 8 dBZ Resolution : 0.01 dB Accuracy: ≤0.2dB @ SNR>10dB ; r=230Km; Δr<900m **e) Differential phase (Φ_{DP})** Dynamic range : -180 to 180 deg Resolution : 0.1 deg Accuracy: ≤2deg @ SNR>10dB; r = 230Km; Δr<900m **f) Correlation Coefficient at zero lag (ρ_{HV})** Dynamic range : 0 to 1 Resolution : 0.005 Accuracy: ≤ 0.05 @ SNR>10dB ; r= 230Km; Δr<900m *System design parameters should satisfy all*

		accuracy requirements and will be tested with simulated signal at coupler port.
2.45	**Calibration**	a) Standalone Radar Simulator with Dual Channel RF output from IQ Data Playback shall be provided for Radar data processing. b) The system shall have the provision for complete automation of the calibrations routines to verify system parameters and receiver calibrations. c) Provision for quick calibration check to ensure system sensitivity and dynamic range. d) Provision shall be made for programmable and auto run for absolute internal calibration to ensure reliability of polarimetric parameters at user defined intervals and display the current values to monitor the system health and accuracy of the Radar. e) Provision shall be given for external calibration through standard external equipment. f) There should be a provision for automatic update of Radar calibration parameters. g) Transmitter peak power measurement. h) System noise figure measurement.
2.46	**Sun & Sphere calibration**	a) Automatic software driven and manual mode operation for verifying pointing accuracy 0.1 degree. b) The system shall be made to point towards sun for establishing the gain and pointing accuracy of the antenna; stability and reliability of receiver chain using solar flux (sun) values known from other sources. c) Procedure shall be provided and to be demonstrated during FAT & SAT. d) Script based execution of such measurements and saving of results are expected as a part of such provision. e) The system shall be made to point towards a metal sphere for establishing the Radar

		Constant of the system. f) Procedure shall be provided and to be demonstrated during FAT & SAT. g) Script based execution of such measurements and saving of results are expected as a part of such provision.
2.47	**Base Parameters to be measured**	
	Real time Processing	FPGA based or equivalent for Base Product generation (required FPGA Board and Workstations shall be provided)
	Parallel Signal processing Computing Capability.	10Gbps or higher Broadcasting of I&Q data (each 32bit resolution) for multi node signal Processing
	Data Outputs (All Base Products)	16bit, 8bit (Configurable)
	Simultaneous Horizontal / Vertical Transmit	
	Corrected reflectivity H/V	Zh, Zv [dBZ]
	Uncorrected reflectivity H/V	UZh, UZv [dBZ]
	Radial Velocity H/V	Vh, Vv [m/s]
	Spectral width H/V	Wh, Wv [m/s]
	Cross correlation coefficient	RHOHV
	Differential phase	PHIDP [°]
	Differential reflectivity	ZDR [dB]
	Clutter power H/V	CCORh, CCORv [dB]
	Signal quality index H/V	SQIh, SQIv
	Signal Noise Ratio	SNRh, SNRv [dB]
	Inphase / Quadrature signal H/V	Ih, Iv, Qh, Qv
	Power spectrum H/V	PsH, PsV

	Horizontal Transmit	
	Corrected reflectivity	Zh [dBZ]
	Uncorrected reflectivity	UZh [dBZ]
	Radial Velocity	Vh [m/s]
	Spectral width	Wh [m/s]
	Depolarization Ratio	LDR [dB]
	Signal Noise Ratio	SNRh [dB]
	Signal quality index H	SQIh
	Clutter power H	CCORh
	Vertical Transmit	
	Corrected reflectivity	Zv [dBZ]
	Uncorrected reflectivity	UZv [dBZ]
	Radial Velocity	Vv [m/s]
	Spectral width	Wv [m/s]
	Depolarization Ratio	LDR [dB]
	Signal Noise Ratio	SNRv [dB]
	Signal quality index V	SQIv
	Clutter power V	CCORv
2.48	**Radar Controller**	a) Workstation-based radar controller with user friendly GUI. Radar operation parameters (including selection of Wave form parameters, scan parameters, Signal Processing parameters, Operation modes selection, Scan strategy selections, etc.) should be selectable through the workstation-based Radar Controller software. Scheduler for long time observation also to be provided. b) Two Workstations of latest suitable computer configuration at least 2 Nos. of Intel latest Xeon silver processor, 64 GB RAM, 2TB SATA HDD, NVIDIA 8GB Graphics Card and 10G NIC and 27-inch IPS LED Monitor. Both Workstations shall be used for operation and control of the Radar in hot Redundancy mode. Workstation shall have Raid 1 configuration of storage to avoid

		any loss of data. c) One portable computer (laptop) of latest version/ configuration, capable of replacing functions of(a)and (b) d) One 55" (inches) UHD 4k LED display. e) Radar controller shall display system Health Check parameters including status, interlocks & important analog parameters of all the subsystems. f) There shall be provision to record and replay from I&Q data. g) Provision for web based remote Radar control, monitoring and operations. h) Super user and user level configurations shall be provided for Radar Controller and the details will be given during implementation stage.
2.49	**Display, Archival, Product Generation and Peripherals**	a) Two Workstations of latest suitable computer configuration at least 2 Nos. of Intel latest Xeon silver processor, 64 GB RAM, 2TB SATA HDD, NVIDIA 8GB Graphics Card and 10G NIC and 27- inch IPS LED Monitor. Both Workstations shall be used for display and NRT product generation of the data and shall have Raid 1 configuration of storage to avoid any loss of data. b) Two workstations with latest configuration at least 2 Nos. of Intel Xeon silver processor, 64 GB RAM, 2TB SATA HDD, NVIDIA 8GB Graphics Card and 10G NIC and 27-inch IPS LED Monitor. Workstations shall be used for Offline product generation and networking/communication purpose. c) GPS based NTP Server for Network Clock Time Synchronization. d) NAS storage with RAID-6 dual parity, Dual Controller, Total cache 48GB or higher, 4 x 10GbE Ethernet Ports, support NFS v3, CIFS or higher, with capacity 20TB or higher with NLSAS/ SSD). e) Provision for recording and playback of I&Q offline data as well as storage of I&Q data in NAS Box. Minimum 1 hour data

		archival with full bandwidth. f) Color laser printer (600 dpi minimum) to get Hard copy output. g) Provision for web browser based remote Radar control, monitoring and operations. h) Data Archival as in section.3. (Data Archival) of this chapter. i) Archived data format as in section.4. (Data Format) of this chapter. j) All software licenses shall be multiuser and open, without any restriction / hardware lock / soft lock. All OS and radar software licenses shall be in the name of IMD.

	Power Requirements	
2.50	**Power**	Capable of operating at 400V ±10% V, 50 ±2% Hz in Three phases.
2.51	**Online UPS**	Two online UPSs, in redundant mode and each with capacity of 15 KVA or minimum capacity required for continuous operation of entire DWR system, whichever is higher, along with changeover facility for switching to standby UPS, to run the whole radar system for at least 30 minutes. Catering to required voltage stabilization with a power factor suitable for the system.
2.52	**Diesel Generator**	At least 20 KVA or suitable Diesel Generator Set with AMF panel for automatic turn ON when mains fails and capable to takes up the load of all the essential components and accessories of the Radar system required for operation). The DG set should be silent with a separate canopy for operations in all weather conditions.
2.53	**Enclosure**	A well-furnished two storied, pre-fabricated cabin-size of at least 400 Sq feet to meet all operational requirements which includes operational room, Radar Officer room, UPS, stores, Kitchenette, Rest room, Washroom, along with ACs, water dispenser, RO water filter, electric kettle, microwave oven, induction top with induction utensils, furniture and separate outside canopy housing for D.G. set to make it convenient for operational staff to work round the clock as per Annexure-XII.

	Features	
2.54	General	The radar system should be having required menu driven software with GUI controls for: 1. Operating the radar. 2. Setup of operational parameters. 3. Configuration of weather products. 4. Generation of alerts and warning, 5. Configuration of Network Communication Hardware used in the system. 6. Setup of display overlayed on map of India with political boundaries of international borders, states and district boundaries. 7. Automatic calibration for antenna, dynamic range, etc. 8. Monitoring the health of the radar using BITE. 9. The process of setup of various scan parameters should be easily accessible to operators using GUI. 10. Base Product generation. 11. Base Product display with zooming options, latitude, longitude display, selectable parameter displays and color coded 12. Simultaneous display of data having more than one parameter. 13. Requisite software protection for denying unauthorized access to be provided. 14. System should be operated remote monitoring and control including equipment power supply 15. The base data (output of radar processor) shall be stored automatically on hard disk and NAS in compressed form. At least three month past data shall be available on the local computer disk at a time. 16. Radom should be Tuned A sandwiched or equivalent, suitable for operating coastal / snow regions / high altitudes 17. The entire radar system shall be mounted on a steel tower which will be delivered to the

		consignee ready for operation at any selected site. Appropriate cemented concrete base, hydraulic leveling arrangement (if required), networking hardware, diesel generator (that takes up the load of all the essential components and accessories of the Radar automatically for long time when utility power fails), UPS with batteries, fuel storage tank for generator, etc., shall also be provided. Diesel generator shall have automated switching on and off in the event of normal electricity failure. All system should have capability to shut down in the event of long time power failure, shortage of diesel to operate the DG etc. 18. Air-conditioned equipment shelters with adequate space for housing all radar electronic equipment's, the workstation, UPS, stationery, manuals, tools etc. 19. Lightning protection is to be in place ensuring safety of the system and mounted elements by the way of grounding cable through ground bar or other suitable mechanism. 20. The electrical earthings (maintenance free), requirement of various peripherals inclusive of radar, has to be taken care and appropriate early streamer emission lightning protection system with lightning flash counter along with deep chemical gel and copper plate based earth pits shall be provided by the bidder/manufacturer. 21. The project is to be executed on a turnkey basis and all items shall be supplied and complete the installation and commissioning within the stipulated time as mentioned in the original document. 22. The supplied DG Set, UPS etc., should have a service facility in India. 23. The antenna should be mounted on tower of height 20 meter from the ground/shelter, for better exposure. 24. Tower shall be provided with a lift to access the top floor (without hindering antenna

		elevation axis operation) for service / installation / inspection engineers (4-person) and not for material movement. 25. All protection for the movement of service personals shall be provided in the equipment bays/floors. 26. The antenna mount should be equipped with suitable leveling system to ensure horizontal alignment of azimuth and elevation axis. Suitable readers shall be included with an accuracy of 0.2 degree or better. 27. Housing of the electronic subsystem may be considered at one stage below the antenna housing floor to avoid losses. However, this is purely at the discretion of the bidder taking care over all link budget and performance of the system which is essence of the contract. Suitable air conditioning system also should be provided as and where required to operate all subsystems as per the specification. 28. IMD will take possession of the radar after commissioning. Cost involved of the system (Radar, inclusive of all the deliverables as per this document) and operator till then shall be borne by the supplier. 29. Transportation from the factory to the site will be the responsibility of the bidder/ manufacturer. 30. The entire site preparedness and custom tuning/positioning is to be fully borne by the bidder/manufacturer and the work is to be undertaken by the bidder/manufacturer in the presence of IMD engineers. 31. The entire work of installation and commissioning of the radar has to be carried out by the bidder/manufacturer, though IMD may station few of its officials at the site for guidance. 32. Communication hardware for data transfer to central location. Contractor shall provide all necessary Communication hardware i.e.

		Firewall (UTM Protection 24x7 FortiCare plus Application Control, IPS, AV, Web Filtering and Antispam Services), EtherNet Switch, FTP Server (one of the workstations may be configured as ftp server also) to Transfer the data to external agencies and to a central location identified by IMD 33. The network link between the radar system and central server (At Delhi) will be provided by IMD; firm shall suggest suitable bandwidth for real time system control and monitoring; a near real-time receipt of data for generating composites of all the radars.
2.55	**Software**	a) The system should have proven software for data processing and display. b) The offered software should be a standard software and in use in any National Weather Service as per Chapter-3, General Requirement under (a) Clause-xiv.

3. <u>ARCHIVAL OF RADAR DATA</u>:

a. The base data which includes Reflectivity, Velocity, Spectrum Width and Dual Pol. Parameters (output of radar processor) shall be stored automatically on hard disk. Network Attached Storage on RAID to be provided for archival of Base Parameters data as per 2.49(d)

b. A-4 size high resolution Ink tank Color Printer (600dpi) for taking hard copies of images and products shall be provided.

c. External Blue ray DVD writer with 12 disks of dual layer Blue ray DVD R/W and 50 disks of Blue Ray DVD/R at each site to be provided.

d. Provision to record, store and offline playback for analysis of I & Q data.

e. The Annual Maintenance Contract with service providers should include a clause that Hard Disk should be retained by the organization (IMD), even if it is faulty. This excludes any hard disks / flash disks or storage media that contains any data of IMD. While disposing the Hard Disk it should be destroyed so that data cannot be retrieved.

4. DATA FORMATS:

4.1 Digital Data

a) System should be capable of archiving of raw data (I & Q) and generating Polarimetric Doppler Weather Radar Base data and products in BUFR, NETCDF, GRIB2, HDF5, KML, KMZ formats.

b) Data should be converted from RAW, RAINFALL mm/hr, RAINFALL ACCUMULATED in mm, Horizontal winds at user selected levels in height, to Cartesian coordinates. Such data should also be available in HDF5, NetCDF.

c) Stand-alone BUFR, NETCDF, HDF5, GRIB2, encoding and decoding software on Licensed Linux/MS-WINDOWS platform should be provided. The software should be able to convert the radar data to formats as per user requirements and IMD specifications mentioned at 4.1(a) above.

d) NetCDF format data shall be provided in NCAR CFRadial, and IMD-NetCDF format. Details of IMD-NetCDF format, HDF5 and BUFR-OPERA format file as required by IMD shall be provided to successful bidder for developing software applications.

e) Existing central server system at IMD HQ, New Delhi is based on Vaisala (SIGMET) IRIS software for centrally generating various products including mosaic and various data formats from RAW data & data products. The successful bidder should provide necessary provision to ingest their radar data in a compatible format for use with already available central server at New Delhi.

f) Data format if proprietary should be disclosed with decoding software codes.

g) The successful bidder shall provide data format converter from Raw Data format as well as products to ASCII.

4.2 Image data

The system should be capable of automatic generation of images in (JPEG, GIF, TIFF, PNG) format files for publishing on web site. Images should have high resolution for full HD displays and also for web pages. Following file naming conventions are to be implemented for automatic generation of images after completion of each volume scan.

a) caz_stn.gif Max Z 250 km range
b) ppz_stn.gif PPI Z 400 km
c) ppi_stn.gif PPI Z 150 km
d) ppv_stn.gif PPI V 250 km
e) vp2_stn.gif VVP 40 km Range/ up to 10 km height
f) sri_stn.gif SRI 150 km
g) pac_stn.gif PAC 150 km accumulated rain for 24hrs

5. SOFTWARE

5.1 FEATURES:

The radar system should be having required menu driven software with GUI controls for:

a) Operating the radar.

b) Setup of operational scan parameters.

c) Configuration of weather products.

d) Generation of alerts and warning,

e) Setup of communication channels.

f) Setup of display overlaid on map of India with political boundaries of international borders, states, and district boundaries.

g) Automatic calibration for antenna, receiver, dynamic range, etc.

h) Monitoring the health of the radar using BITE.

i) The process of setup/change of various scan parameters should be easily accessible to operators using GUI.

j) Product generation.

k) Product display.

l) Generation of audio-visual warnings based on user defined thresholds for severe weather detection.

m) Automatic transmission of warnings (visual and text) to users via communication channels.

n) Facility to reprocess and display products from past data.

o) Simultaneous display of data having more than one parameter.

p) Requisite software protection for denying unauthorized access to be provided.

q) The system shall perform optimized correction of reflectivity data for attenuation effects from heavy rain based on algorithm using polarimetric parameters such as ZDR, Φ_{DP}, K_{DP} and ρ_{HV}.

5.2 SOFTWARE PRODUCTS

I. The System shall be capable of generating the following products from the base data output from the radar signal processor.

Algorithms and references for all the products listed below and supplied should be provided.

II. The licenses of all softwares being installed with the radar system shall be in the name of Director General of Meteorology, IMD or any competent authority and the details of all softwares used in the radar system should be mentioned.

5.2.1 Base Products

a. The un-filtered I & Q data archival and playback facility to generate base products.

b. The system shall generate base data comprising for **Z**, **V**, **σ** and Polarimetric products after applying different corrections to raw data (like attenuation effect due to precipitation, earth curvature, range normalization, beam blockage, interference due to external sources, non-meteorological echoes, second-trip recovery, ground reflection, bright band correction, etc.)

b) Products are to be generated based on user defined parameters already selected and stored in workstation and NAS against the various scan schedules.

c) Provision also should be available to generate all products in offline mode using the archived raw data.

5.3 Primary Products

5.3.1 Maximum Display (Z, V, σ)

The System shall compute and display maximum values of base data products (Z, V and σ) in horizontal (East West and North South) and vertical columns between users defined heights and also display the

partial images in a single frame with side panel heights to a scale of 2km covering 0 -18 km.

5.3.2 PPI (Plan Position Indicator) (Z, V,σ)

The system should be capable of generating the PPI product for all types of raw data at user selectable elevation angles from lowest to highest elevation in the scheduled scanning procedure.

5.3.3 CAPPI (Constant Altitude Plan Position Indicator)

The System shall interpolate from the volume scan data set for a geo-horizontal plane at user vertical defined height and display the same pertaining to user selectable data form Z, V and σ from 1 km to 18 km height.

5.3.4 PCAPPI (PSEUDO CAPPI)

The system shall incorporate data form the highest elevation scan near the radar and from lowest elevation scan for areas far away

from the radar for which radar beams are not intersected by user defined plane for CAPPI and display same pertaining to data selected by user (Z, V and σ) from 1 km to 18 km height.

5.3.5 VCUT (Vertical Cut)

The system shall interpolate all the base products (Z, V and σ) in any vertical plane passing through user defined two points and display the same for the user selectable parameters.

5.3.6 EBASE (ECHO BASE)

The system shall identify from the volume scan data the minimum height up to which the user defined threshold value for each base data exists and display them for user selectable data.

5.3.7 ETOP (ECHO TOP)

The system shall identify from the volume scan data the maximum height up to which the user defined threshold value for each base data exists and display them for user selectable data.

5.3.8 HAIL WARNING

Based on reliable hail warning algorithm, the system shall generate a hail warning symbol at the appropriate place in the PPI display in one or more of the operator chosen fields.

5.3.9 HYDROMETEOR CLASSIFICATION

The system shall be capable of generating a product for classification of hydrometeors based on Polarimetric parameters (Z_{DR}, Φ_{DP}, K_{DP} and ρ_{HV}). Provision for changing parameters in a scientific way for customization of the hydrometeor classification is a required. Hail detection based on this classification shall be one of the products in this class.

5.4 Derived Meteorological Products:

5.4.1 Velocity Products

The system shall generate and display following velocity products:

a. Radial velocity versus the azimuth for a fixed elevation and a fixed slant range (VAD).

b. Radial velocity at a fixed user defined range on height and azimuth angles (Radial velocity display for fixed range, azimuth angles for various height and azimuth).

c. Horizontal wind velocity and wind direction using barbs in a vertical column above the radar site for different heights including divergence & convergence product. (VVP_1)

d. The vertical Profile of the horizontal winds derived from the Radial Winds within 40 km range of radar and 10 km height using

standard algorithm in the form of Wind Barbs showing wind speed and direction in the time series manner for a user selectable time duration (VVP_2)

e. Horizontal wind vectors (UWT) using barbs at user defined layer height with or without underlay of reflectivity or velocity in PPI / CAPPI format.

5.4.2 Hydrological Products:

The system shall generate and display following hydrological products:

a. Rainfall intensity using polarimetric moments as well as Z-R in a user selectable surface layer and constants with constant height above ground. Provision of specifying freezing layer height dynamically.

b. Instantaneous estimation of water content (VIL) residing in a user defined atmosphere layer in the atmosphere to be displayed in PPI type of display.

c. Precipitation accumulation (PAC) using polarimetric and Z-R in a user definable time period.

d. Rainfall amount in user defined catchment basins for user defined time span.

e. Provision for putting river basin map overlay as per user requirement.

f. Rainfall intensity, rainfall rate and accumulation products shall have an option to be adjusted in real time by Rain Gauge, disdrometer data. Rain gauge and disdrometer data shall be displayed along with the radar data.

g. Adjustment of rainfall rate by appropriate rain gauge or disdrometer data shall be possible.

h. The system shall convert data of reflectivity and polarimetric measurement to horizontal maps of rainfall intensity.

i. The system shall be capable of generating precise rain rate information using combination of polarimetric parameters as well as Z(h)

j. The system shall use algorithm based on polarimetric parameters for correcting rain rate estimation errors arising out of hail, non-meteorological echoes and attenuation.

5.4.3 Aviation Products

a) The system shall evaluate derivatives of wind velocity in radial, azimuth, elevation, North South, East West directions and derive horizontal, vertical and three-dimensional shears.

b) The system shall also be able to generate warning product on microburst, meso-cyclones and wind shears beyond adaptable threshold levels.

c) The system shall evaluate maximum turbulence within user defined atmospheric layer and display in top view.

5.4.4 Warning and Forecasting Products:-

a) System shall generate and display warning symbols for thunderstorm, hailstorm, dust storm, meso-cyclone, convergence, divergence and gust fronts.

b) System shall be capable of evaluating speed and direction of movement of weather systems.

c) System shall also be capable of warning if any of the conditions defined by the user are reached or fulfilled on reflectivity, velocity, VIL, rainfall intensity, rainfall accumulation and wind shear.

d) System shall be able to detect tornado and gust fronts associated with storms and issue visual and text warning message.

e) Workstation with TITAN software running in real time should be provided and made available with appropriate data intake.

5.5 Alphanumeric Products

The system shall also be able to provide all the product data (i.e., base, primary and derived) in ASCII tabular form.

6. Built In Test Equipment (BITE).

A modern system making use of latest technology for continuous monitoring of the operational status of hardware and software functions and utilities of the radar system shall be supplied.

a) BITE processor shall measure and process a number of real time analog and digital parameters in the radar system and generate and display the error message whenever their value falls outside the specified permissible range.

b) BITE processor shall continuously monitor input and output signals of every module/PCB for any deviation from the standard values.

c) Audio alarm indication for occurrences of faults is to be provided.

d) Centralized monitoring of status of radars networked.

7. **Provision for Networking & Communication system for data transfer to central location:**

a) Provision shall be made with suitable communication hardware & software for real time transfer of digital radar data and images generated in real time through networking to control and monitoring centres and central server at IMD HQ, New Delhi.

b) All networking components required at radar site as well as command and control centre shall be provided by the bidder.

c) Necessary interface shall be provided for sending radar data through GSM, VPN and internet.

d) These centres should be able to monitor and control the functions of the radar. Data from respective radars under each centre will be utilized for real time display facility for monitoring the health parameters as well as the weather data acquired by radars in operational mode.

e) The communication link will be provided by IMD. The bidder shall specify the bandwidth requirement.

f) Deliverables for control and command centres are to be provided as per Annexure-VI.

g) The radar data is to be converted in a compatible format for use with already available central server of the existing Doppler weather radar network of IMD based on IRIS (SIGMET) software of M/S Vaisala.

h) Data of all radars to be over layed on GIS map with option to include underlay maps from Google, Open street map or ESRI, Arc GIS, etc. Locally installed and accessible GIS server using Open street map to be provided. The Products which are to be overlayed are:

- Reflectivity
- Rainfall
- Warnings based on Rainfall, Velocity, Hydrometeor Classification.

i) Boundary of states will be provided by IMD as shape files.

8. INSTALLATION:

All installation related work including civil work shall be carried out by the bidder. However, IMD personnel shall be associated with the installation process. All installation materials required shall be supplied by the bidder.

a) The bidder shall take into consideration that the system is required to be installed on site on a Galvanized Steel Tower with nominal height of 20 m upon which radar antenna and radome shall be installed. Towers should be able to take the dynamic load of the radar system and its accessories while in operation, (with due consideration for the gusty wind load) and shall be erected by the supplier.

b) Walk/inspection space of about a meter width all around the radome base with a safety railing of 1.5m height is recommended for servicing of Radome. The railings should not degrade the signals of the radar during regular operations.

c) The entire responsibility of civil construction/site preparedness for installation of the radar and its peripherals shall be the responsibility of the bidder.

d) Prerequisite for both civil & electrical requirements for installation of radar be clearly mentioned separately, inclusive of suitable diagrams of antenna & radome installations, along with the technical bid.

e) The required number of electrical earthing based on latest technology i.e., Chemical Gel earthing is required for various peripherals inclusive of radar, has to be provided by the bidder.

f) Suitable Lightning Arresters for protecting the radar with reliable lightning protection system with deep chemical gel and copper plate-based earth pit shall be carried out by the bidder.

g) Aviation warning indicator lamps shall be supplied and installed by the bidder on the top of the antenna/radome at appropriate height.

h) All other requirements such as power and communication facility etc. will be arranged by successful bidder for enabling tower construction, installation till commissioning of radars at each respective site.

i) IMD may not facilitate the accommodation and transportation arrangements for the personnel of the installation team of the bidder.

9. LOCATION:

List of tentative sites for installation of Radars is attached vide at Annexure-VIII.

10. TESTING AND ACCEPTANCE:

a) The bidder shall submit detailed test plans for Factory Acceptance Testing (FAT) prior to shipment and Site Acceptance Test (SAT) after installation at site for system acceptance. The test plan shall require concurrence by the IMD.

b) The objective of the tests shall be the verification of performance of the system as per the specifications and functional requirements as per TENDER DOCUMENT.

c) As per the mutually agreed test procedures, FAT shall be carried out at the manufacturer/OEM's premises prior to shipment. The equipment shall be shipped only after satisfactory conclusion of the pre-shipment acceptance testing (FAT).

d) As per the mutually agreed test procedures, acceptance test should be carried out at each radar site after installation. The bidder shall arrange for necessary test equipment.

e) Any defects / deviations noticed during the site acceptance tests shall be rectified within a maximum period of one month from the completion of the tests. After such rectification, the tests shall be repeated to verify the rectification.

f) Within 30 days of installation of each system, the bidder should secure acceptance of the radar and its peripherals as a whole system.

11. SYSTEM COMMISSIONING:

After the satisfactory completion of the site acceptance tests, the bidder shall demonstrate the reliabilities and capability of the system to be operated continuously and satisfactorily for a period of 15 days endurance test of the complete radar system, after which it will be said to be "*Commissioned*".

12. WARRANTY:

a) Warranty shall remain valid for three years after the system has been commissioned and accepted by IMD as per terms of the contract agreement. The warranty shall also include all third party bought out items / subsystems including Tower, Computers, Generator Set and UPS, etc. OEM certification of warranty for the third party items is to be provided.

b) This warranty clause is applicable at all individual radar sites.

c) Upon receipt of notice about faults, the bidder shall repair or replace the defective goods or parts thereof, free of cost, at the site.

d) The bidder 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. This excludes any hard disks / flash disks or storage media that contains any data of IMD.

e) The bidder shall supply the software updates, if any, during the warranty and CAMC period, free of cost.

f) If the bidder, could not meet the uptime of 85 days in a quarter of 90 days at the time of payments and there is a failure of the system for more than the criteria stipulated then a quarterly penalty amount of 0.1% of the total equipment cost per day for that radar, for days it is down, will be deducted from the performance guarantee amount, subject to an upper ceiling of 10% of the total equipment cost. Furthermore, the purchaser may proceed to take such remedial action(s) as deemed fit by IMD, at the risk and expense of the supplier and without prejudice to other contractual rights and remedies, which the purchaser may have against the supplier.

g) Maximum two weeks shutdown for Annual maintenance shall not come under the clause. Delay due to external factors and natural calamity beyond human control will be exempted.

h) During warranty period, the bidder is required to visit consignee's site at least once in four months commencing from the date of acceptance at site for preventive maintenance, calibration and various types of checks of the goods/ equipment and a detailed report consisting of all test procedure values etc. must be submitted at Upper Air Instrument Division (UAID), India Meteorological Department, New Delhi along with satisfactory certification by the UAID (IMD).

i) During warranty the bidder shall deploy trained manpower at each site preferably Graduates in Engineering in Electrical / Electronics / Communication for maintenance support round the clock.

13. <u>TRAINING</u>:

a) The bidder shall provide factory training in operation, maintenance, calibration and fault identification of the radar system along with modification & up-gradation in application software to 4 persons from IMD at the premises of OEM for a period of 3 weeks.

b) The training shall also include lectures on the system design, computer hardware/software, operation and such other aspects which are considered essential for optimum utilization of the radar system.

c) Onsite training in operations and first level fault identification to be provided for a period of five working days.

14. DOCUMENTATION:

a) The bidder shall furnish two copies of the documentation (detailed in point b-m) in well-bound sets/volumes of good print quality for each radar site and two copies of the same to Radar Unit, UAID, New Delhi.

b) Soft copy of all the manuals should also be provided along with hard copy.

c) All standard manuals, technical data sheets and other pertinent information of functional, electrical, and mechanical modules used in the System shall be included in the manuals.

d) Interface connectivity document has to be provided for hardware as well as software interfaces.

e) Detailed documentation of all the proprietary data formats, bit-by-bit information on the header and data patterns should be provided.

f) Free updates made to firmware, processing software and clarifications should also be supplied with relevant documentation during the period of warranty and CAMC thereof.

g) The system functional block diagram shall be laid out so that a user can readily understand and identify the major functions of the system.

h) The operating instructions shall include routine procedures, safety and emergency procedures as applicable. These instructions shall include switch-on, standby, normal operating procedures and switch off procedures. The sequence of turn-on procedures shall be optimized and shall account for controls at different physical locations. The instructions shall provide assistance to an operator to use the System for optimum performance.

i) Sufficient illustrations shall be included to identify and locate all operating controls and indicating devices.

j) Layout and Schematic Assembly Drawings: Schematic Diagrams of all assemblies, modules shall be provided.

k) Parts List: Detailed parts list with part numbers shall be provided.

l) Algorithm of Products: The algorithms used in product generation shall be supplied.

m) It shall be the responsibility of the bidder to provide detailed parts list of modules sourced. List of items imported and incorporated in the system should also be provided separately. Only such items may be used in the system whose technical details are made available by the manufacturer.

15. PROJECT SCHEDULE:

a) Delivery

First radar to be installed, accepted, and commissioned within 12 months from the date of award of contract agreement. Rest of the radar systems shall be delivered, installed, and commissioned within 18 months from the date of award of contract agreement in a phased manner. In this regard the bidder will submit the actual schedule along with time line for execution of installation and commissioning work for each radar.

i. Supply of all stores (for first radar) at site within a period of 10 months from issue of supply order.

ii. Installation of all equipment to test the first radar within one month after supply of equipment.

iii. Acceptance and commission of first Radar within one month after installation.

iv. Supply, installation, acceptance and commissioning of all the remaining radars within a period of 18 months from the issue of supply order.

b) **Preliminary Design Review**

(PDR) will be held after one month from the date of award of contract where in the design of hardware & software to be delivered as part of the system will be discussed at the office of UAID, IMD, New Delhi (India).

c) **Critical Design Review**

(CDR) will be conducted within six months from the date of award of contract where in the design along with performance parameters of the sub units will be discussed in details to ensure that the system achieves the performance parameters to be delivered as per TENDER DOCUMENT.

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

The bidder shall deliver the goods and perform the services (delivery, installation, acceptance and commissioning) under the contract within the time schedule specified by the IMD in

the "List of requirements/ technical specifications" section and as incorporated in the contract agreement. The LD will be imposed if delivery schedule is not met as per Clause No. 20 of Chapter 2, at the rate of 0.5 % per week of the contract value of each radar.

17. COMPLIANCE STATEMENT:

a) The bidder shall submit detail para-wise compliance statement in tabulated format mentioning full details with reference Para, Clause and page no. Of the bid for each parameter along with reasons for compliance/ non-compliance, if any.

b) The bidder shall also submit the details of references, reports etc. for each compliance giving name of technical manual, chapter number, page number and para and shall provide a copy of referred documents along with the technical bid.

c) Silence on any para or simply making a statement 'complied' without proper justification or reference will be considered as non-compliance.

d) All the claims with respect to any specification shall be supported by document along with bid document otherwise same may be treated as non- compliance.

e) Compliance matrix should be filled in at all points of TENDER DOCUMENT individually.

f) All pages should be signed and stamped.

18. COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT (CAMC):

a) The bidder shall quote for CAMC for seven years subsequent to completion of warranty period.

b) The bidder shall submit the year wise lump sum amount of CAMC charges.

c) The amount charged for CAMC shall not be quoted as percentage of the tender cost / cost of equipment.

d) The CAMC charges shall be included for price comparison. The terms & conditions for the CAMC are enclosed at Annexure -V.

e) The Bidder shall deploy trained manpower at each site preferably Graduates in Engineering in Electrical / Electronics / Communication for maintenance round the clock.

CHAPTER-4

PRICE SCHEDULE

(Financial Bid format)

S. No	Name of Item/Store	Quantity	Model Number	Base price	Applicable taxes & duties	Unit Price (5+6)	Total price (3x7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
STORE COMPONENTS (HARDWARE &SOFTWARE ETC.)							
1.							
2.							
SERVICES COMPONENTS							
1.							
2.							

Total Tender price in figure:

Total Tender price in words:

Note/Instruction

1. The bidder shall use its own letter head for quoting the prices. Document should be signed and stamped on all the pages.
2. Price shall be preferred in the format for deliverables for stores & services as given at Annexure-VI.
3. The name of each store/item 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 India) Transportation /freight/insurance of stores shall be mentioned. In case not mentioned, it is treated as 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, 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 given as per details and

specifications given in the schedule. 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 on eprocure.gov.in

Signature of bidder

Seal of the bidder

CHAPTER-5

OTHER STANDARD FORMS

Annexure-I

CHECKLIST

S. No	Activity	Compliance Yes/ No/ NA	Page& Para No. of the bid Document
1.	Is valid Registration certificate of the Indian Bidder with any state or central government body of India attached with technical bid?		
2.	Is Earnest Money Deposit (EMD) (Bank Guarantee /FDR) of required amount enclosed? (As per Annexure-III)		
3.	Is the EMD submitted by the bidder other than participating bidder? **If yes, then bid is likely to be rejected.**		
4.	Is Registration certificate from NSIC/Government bodies on SSI attached for relaxation of EMD?		
5.	Is validity of EMD kept for 240 days?		
6.	Is the validity of bid as per the TE document?		
7.	Is the Tender Terms & Conditions Acceptance Form duly filled and signed (i.e., terms and conditions are acceptable)? (As per Annexure-II)		
8.	Is the bid signed? (**Tenders is liable to be rejected if not signed**)		
9.	Is the clause-by-clause compliance statement for the "List of requirements/ technical specifications "section enclosed? Compliance matrix indicating point wise compliance to all the points of tender document. Each point needs to be complied and single statement for all the points will not be agreed to.		
10.	Is the copy of the last purchase order(s) and end user Certificate enclosed?		
11.	Is tender Submitted by an Indian Original Equipment Manufacturer (IOEM)?		
12.	Is tender submitted by a Foreign Original Equipment Manufacturer?		
13.	Whether valid Back-to-back support agreement with equipment manufacturer and software developer company attached?		
14.	Whether Permanent Account No. of bidding bidder with proof is provided.		

15.	Is sales & service tax number/GST with registration certificate attached?		
16.	Name of the bidder who quoted the price?		
17.	Name of currency quoted in the bid?		
18.	Name of the bidder with complete address to whom contract is to be awarded?		
19.	Whether un-priced bid similar to price bid with price hidden as per Chapter-4 is enclosed?		
20.	Whether Signed Integrity Pact document as per enclosed format is attached?		
21.	Whether the proforma for performance Statement with documentary proof as per Annexure-VII is enclosed?		

(Name & Signature with date)

(Name of Representative of the firm/company seal)

Annexure-II

TENDER TERMS & CONDITIONS ACCEPTANCE FORM

(All the terms & conditions of tender document are acceptable to tenderer)

To,

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

Ref: Tender Enquiry (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-in the delivery schedule specified in the "TENDER DOCUMENT-Chapter-3/ technical specifications".

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

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.

I/We are not involved in any litigation that may have an impact of affecting or compromising the delivery of services as required under this assignment.

I/We confirm that we have not been deregistered/banned/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 Authority in India or any other country in the world for any kind of fraudulent activities on the date of submission of bids.

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.

(Name and designation)

(Duly authorised to sign tender for and on behalf of tenderer)

Note*:

1. Bidder/company shall use their own printed letter head for issuing this certificate.

2. Acceptance shall be unconditional.

Annexure - III

MODEL BANK GUARANTEE FORMAT FOR FURNISHING EMD

(Format only)

Whereas

.

(hereinafter called the "tenderer")

has submitted their offer dated .....

for the supply of .....

(hereinafter called the "tender")

Against IMD's tender enquiry No . .....

KNOW ALL MEN by these presents that WE .....

of....." .... having our registered office at

.....

.. are bound into ..... (hereinafter called the "Purchaser)

in the sum of .....

for which payment will and truly to be made to the said Purchaser, the Bank binds itself, its successors and assigns by these presents. Sealed with the Common Seal of the said Bank this day .....

20 .

THE CONDITIONS OF THIS OBLIGATION ARE:

(1) If the tenderer withdraws or amends, impairs or derogates from the tender in any respect within the period of validity of this tender.

(2) If the tenderer having been notified of the acceptance of his tender by IMD during the period of its validity: -

- If the tenderer fails to furnish the Performance Security for the due performance of the contract.
- Fails or refuses to accept/execute the contract.

We undertake to pay the "Director General of Meteorology, India Meteorological Department", up to above amount upon receipt of its first written demand, without IMD having to substantiate demand, provided that in its demand IMD will note that the amount claimed by it is due to owing to the occurrence of one or both the two conditions, specifying the occurred condition / conditions.

This guarantee will remain in force up to and including 180 days or after the finalization of tender any demand in respect thereof should reach the Bank not later than the above date.

Bank Guarantee issued with the tender enquiry reference No. CPU/..... Dated .....

(Signature of the authorized officer of the Bank)

(Name and designation of the officer)

(Seal, name & address of the Bank and address of the Branch)

Annexure - IV

BANK GUARANTEE MODEL FORMAT FOR PERFORMANCE SECURITY

To,

The President of India

Through:-

Director General of Meteorology,
India Meteorological Department,
Lodi Road, New Delhi-110008

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 Nationalized 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 Branch

Annexure -V

TERMS & CONDITIONS OF COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT (CAMC) OF C-BAND DUAL POLARIZED DOPPLER WEATHER RADARS

1. The CAMC includes Control Center and Radar Site Material & Services inclusive of all Computer peripherals, Printers, Radar modules, spares, components, cables, connectors etc and radar related materials like UPS, DG, Radome, Tower, etc. and the removed/replaced defective material becomes the property of "The Bidder" excluding any hard disks/ storage media that contains IMD's data.

2. The CAMC amount cannot be less than 5 % (for entire CAMC period per year) of the total cost of the DWR including all sub systems.

3. The CAMC clause will be applicable for control center and individual radar sites separately.

4. The CAMC will commence immediately after the expiry of the warranty period. The comprehensive service includes preventive and corrective maintenance and free replacement of all the defective parts/devices. The company should submit a detailed CAMC plan including preventive maintenance schedule.

5. The "Bidder" shall supply the details of its call centers meant for booking the complaints along with the contact numbers like mobile nos., phone nos., mail address and names etc of its service engineers.

6. The radar shall be decommissioned for a period of two weeks only for annual preventive maintenance and upkeep in a cyclic mode.

7. The "Bidder's" engineers attending to the system are required to make all entries of their work done and corrective measures taken by them with their signatures in the log book kept with the Radar.

8. Overall uptime of the system shall be at least 85 days in a quarter of 90 days. If there is a failure of the system for more than the criteria stipulated then the CAMC amount of 0.5% per day, for days it is down will be deducted, subjective to an upper ceiling of 10% of CAMC charges for that quarter. If the failure duration extends beyond one month then the contract may be terminated and cost of its repair from alternate source will be recovered from the "Bidder" and performance security may be forfeited. Maximum two weeks shutdown for annual maintenance shall not come under the clause. Radar down time due to external factors and severe natural calamity beyond human control shall exempt the criteria.

9. Supplier shall ensure uptime of at least 85 days in a quarter of 90 days by supportive manpower if found necessary.

10. Date of commencement of Annual Maintenance Period of the individual radars shall be fixed by IMD.

11. The mode of payment will be quarterly and it will be made after end of each quarter on the basis of satisfactory performance certificate from user.

12. "The Bidder" will assist IMD for regular backups of all the software. The "Bidder" is also required to restore the existing Software from the Backups whenever required.

13. "The Bidder" will also be responsible for configuring the networking components.

14. CAMC contract will be signed for **seven years**. If required, contract may be extended by IMD. However, IMD reserves the right to terminate the contract at any time by giving three months' notice, if the performance of the system or the services rendered by the supplier is not found satisfactory.

15. The "Bidder" has to submit an undertaking that it will not use IMD data for any commercial purpose.

16. This contract shall be governed in all respects by Indian Laws.

(Signature of the authorized officer of the Firm)

Seal, name & address of the Bidding Firm

Name and designation of the officer

Annexure- VI

FORMAT FOR DELIVERABLES FOR SUPPLY OF Three (03) NOS. SSPA BASED C-BAND DUAL POLARIZED DOPPLER WEATHER RADARS

S. No.	Items Description	Qty.	Model & country of origin
	C-Band dual polarized SSPA based Doppler Weather Radar system including all units/subunits and accessories as follows:	3 Set	
1	Transmitter	3	
2	Receiver	3	
3	Antenna control unit and Radar control unit	3	
4	Radar signal processor	3	
5	Radome, Antenna &Antenna Pedestal	3	
6	Peripherals as per detail at 2.40, Page No.38	3	
7	Radar Application and Operating Software	3	
8	Peripherals as per detail under 7(i), Page No.53 along with one central server and one WEBGIS server to be installed at Delhi. One local GIS server for display of radar data products at each site.	3+1	
9	Equipment Shelter	3	
10.	Tower	3	
11.	Acceptance testing (Site)	3	
12.	Installation	3	
13.	Services	3	
14.	Products (Software)	3	
15.	Any other unit/ subunits/ item not listed above but required for functioning of DWR shall also be included	3	
16.	Installation material	3	

17.	Documentation both hard copy and soft copy (2 Sets per Site and 2 sets at Delhi)	3	
18.	Communication hardware/ software for data transfer to central location.	3	
19.	Training to IMD personnel at each site after completion of installation / commissioning for five working days. **Note:** Expenses for trainees such as air fare, lodging and per diem to be borne by IMD		
20.	Training to IMD personnel at factory for three weeks. **Note:** Expenses for trainees such as air fare, lodging and per diem to be borne by IMD		
21.	7 years (Year - wise) comprehensive Annual Maintenance Contract (CAMC) (for all radar sites and central servers) after the expiry of 3 years warranty period		
	1st Year CAMC		
	2nd Year CAMC		
	3rd Year CAMC		
	4th Year CAMC		
	5th Year CAMC		
	6th Year CAMC		
	7th Year CAMC		
22.	Towers for installation inclusive of all civil works	3	
23.	Two UPSs each of minimum 15 KVA capacity or as per system requirement.	3	
24.	Enclosure with appropriate cooling (Pt. 2.52, Page No. 41)	3	
25.	Diesel generator of 20 KVA (minimum) or as per the system requirement.	3	

***Note:**

- No extra cost will be paid for initial three years warranty.
- All the above items are to be supplied in quantities shown above. However, if a particular item is combined with another item the fact may be so stated against that item without dropping it.
- If a particular item is not used in the radar system, it may be so stated against that item.
- If an item equivalent to the listed items is used in the radar details of same may be stated against that item.
- Manufacturer shall also include any other recommended spares (one each) specific to their radar system and identified as critical item.

(Signature of the authorized officer of the Firm)

Seal, name & address of the Bidding Firm

Name and designation of the officer

Annexure - VII

PROFORMA FOR PERFORMANCE STATEMENT

Bid No. .....

Date of Opening.....Time.....Hours.....

Name of the firm .....

Order placed 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

Annexure- VIII

LIST OF TENTATIVE LOCATIONS FOR INSTALLATION OF THREE (03) NOS. C-BAND DUAL POLARIZED SSPA BASED DOPPLER WEATHER RADARS

S.No	Name of the stations.
1	Banglore
2	Sambalpur
3	Raipur

Annexure- IX

INTEGRITY PACT

Between

India Meteorological Department, Ministry of Earth Sciences, Govt of India hereinafter referred to as "The Principal", and ……..
hereinafter referred to as "**The Bidder/ Contractor**".

Preamble

The Principal intends to award, under laid down organizational procedures, contract/s for…….. The Principal values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness / transparency in its relations with its Bidder(s) and / or Contractor(s).

In order to achieve these goals, the Principal will appoint Independent External Monitors (IEMs) who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1- Commitments of the Principal

(1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:

a. No employee of the Principal, personally or through family members, will in
connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

b. The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.

C. The Principal will exclude from the process all known prejudiced persons.

(2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/*PC* Act, or if there be a substantive suspicion in this regard, the Principal

will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions.

Section 2 - Commitments of the Bidder(s)/ Contractor(s)

(1) The Bidder(s)/ Contractor(s) commit themselves to take all measures necessary to prevent corruption. The Bidder(s)/ Contractor(s) commit themselves to observe the following principles during participation in the tender process and during the contract execution.

a. The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

b. The Bidder(s)/ Contractor(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelisation in the bidding process.

c. The Bidder(s)/ Contractor(s) will not commit any offence under the relevant IPC/PC Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

d. The Bidder(s)/Contractors(s) of foreign origin shall disclose the name and address of the Agents/representatives in India, if any, Similarly the Bidder(s)/Contractors(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any. Further details as mentioned in the "Guidelines on Indian Agents of Foreign Suppliers" shall be disclosed by the Bidder(s)/Contractor(s). Further, as mentioned in the Guidelines all the payments made to the Indian agent/representative have to be in Indian Rupees only. Copy of the "Guidelines on Indian Agents of Foreign Suppliers" is placed at (page nos. 6-7).

e. The Bidder(s)/ Contractor(s) will, when presenting their bid, disclose any and all payments made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

f. Bidder(s) / Contractor(s) who have signed the Integrity Pact shall not approach the Courts while representing the matter to IEMs and shall wait for their decision in the matter.

(2) The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section 3 - Disqualification from tender process and exclusion from future contracts

If the Bidder(s)/Contractor(s), before award or during execution has committed a transgression through a violation of Section 2, above or in any other form such as to put their reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/Contractor(s) from the tender process or take action as per the procedure mentioned in the "Guidelines on Banning of business dealings". Copy of the "Guidelines on Banning of business dealings" is placed at (page nos. 8-17).

Section 4 - Compensation for Damages

(1) If the Principal has disqualified the Bidder(s) from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security.

(2) If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages of the Contract value or the amount equivalent to Performance Bank Guarantee.

Section 5 - Previous transgression

(1) The Bidder declares that no previous transgressions occurred in the last three years with any other Company in any country conforming to the anti-corruption approach or with any Public Sector Enterprise in India that could justify his exclusion from the tender process.

(2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or action can be taken as per the procedure mentioned in "Guidelines on Banning of business dealings".

Section 6 - Equal treatment of all Bidders / Contractors / Subcontractors

(1) In case of Sub-contracting, the Principal Contractor shall take the responsibility of the adoption of Integrity Pact by the Sub-contractor.

(2) The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors.

(3) The Principal will disqualify from the tender process all

bidders who do not sign this Pact or violate its provisions.

Section 7 - Criminal charges against violating Bidder(s) / Contractor(s) / Subcontractor(s)

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to the Chief Vigilance Officer.

Section 8 - Independent External Monitor

(1) The Principal appoints following competent and credible Independent External
Monitor for this Pact after approval by Central Vigilance Commission. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

1. Dr. S. K. Sarkar, IAS(Retd.),

B-104, Nayantara Aprt., Plot 8 B,

Sector- 07, Dwarka, New Delhi- 10075

E Mail: sksarkar1979@gmail.com; Mobile No. 981 1 1 49324

2. Shri Rakesh Goyal, lRSE(Retd.)

2094, Joy Apartment,

Sector 2, Dwarka,

Delhi -"1 10075

E Mail: goyal1259@gmail.com; Mobile No. 9717644264

(2) The Monitor is not subject to instructions by the representatives of the parties and performs his/her functions neutrally and independently. The Monitor would have access to all Contract documents, whenever required. It will be obligatory for him / her to treat the information and documents of the Bidders / Contractors as confidential. He/ she reports to the Director General of Meteorology, India Meteorological Department, New Delhi.

(3) The Bidder(s)/ Contractor(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his/her request and demonstration of a valid interest, unrestricted and unconditional

access to their project documentation. The same is applicable to Sub-contractors.

(4) The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s)/ Sub-contractor(s) with confidentiality. The Monitor has also signed declarations on 'Non-Disclosure of Confidential Information and of 'Absence of Conflict of Interest. In case of any conflict of interest arising at a later date, the IEM shall inform to the Director General of Meteorology, India Meteorological Department, New Delhi and recuse himself / herself from that case.

(5) The Principal 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 Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.

(6) As soon as the Monitor notices, or believes to notice, a violation of this agreement, he/she will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.

(7) The Monitor will submit a written report to the Director General of Meteorology, India Meteorological Department, New Delhi within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.

(8) If the Monitor has reported to the the Director General of Meteorology, India Meteorological Department, New Delhi , a substantiated suspicion of an offence under relevant IPC/ PC Act, and the the Director General of Meteorology, India Meteorological Department, New Delhi has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.

(9) The word '**Monitor** would include both singular and plural.

Section 9 - Pact Duration

This Pact begins when both parties have legally signed it. It expires for the Contractor 12 months after the last payment under the contract, and for all other Bidders 6 months after the contract

has been awarded. Any violation of the same would entail disqualification of the bidders and exclusion from future business dealings.

If any claim is made / lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged / determined by the Director General of Meteorology, India Meteorological Department, New Delhi.

Section 10 - Other provisions

(1) This agreement is subject to Indian Law. Place of performance and jurisdiction is the Registered Office of the Principal, i.e., New Delhi.

(2) Changes and supplements as well as termination notices need to be made
in writing. Side agreements have not been made.

(3) If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

(4) Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

(5) Issues like Warranty / Guarantee etc. shall be outside the purview of IEMs.

(6) In the event of any contradiction between the Integrity Pact and its
Annexure, the Clause in the Integrity Pact will prevail.

_____

_____

(For & On behalf of the Principal) **(For & On behalf of Bidder/ Contractor)**

(Office Seal) (Office Seal)

Place ------

Date ----

Witness 1: _____

(Name & Address) _____

Witness 2: _____

(Name & Address) _____

Annexure-X

PROFORMA FOR CERTIFICATE FROM THE USER INDICATING SUCCESSFUL OPERATION OF RADAR

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the Doppler Weather Radar 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 Doppler Weather Radar system is working satisfactorily for _____ months/ years. The said radar 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

Annexure-XI

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 Three (03) no of SSPA based C band Dual Pol DWRs 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 Three (03) no of SSPA based C band Dual Pol DWRs 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

Annexure – XII

SAMPLE COMPLIANCE STATEMENT

Similar compliance matrix to be filled by the bidder as per following table. The Serial Numbers of points / parameters for compliance should be similar to the respective points elsewhere in the tender document.

Sl.No.	Schedule of requirements, specifications & allied technical details.	C or NC with Chapter, Clause, and Page No. of the Bid Document
	Special Conditions of Contract (SCC)	
	The Bidder shall submit their bids for three (03) numbers of C-Band SSPA based Dual Polarization Doppler Weather Radars as per IMD tender requirement.	
	1. GENERAL REQUIREMENT:	
The specifications described herein refer to C-Band Dual Polarized Solid State Power Amplifier (SSPA) based Doppler Weather Radar including all peripherals, hereafter referred to as "The System". The System shall be capable of detecting and estimating meteorological parameters of severe weather phenomena that cause widespread damage to life and property.		
a.	**All the DWR systems to have following latest state of the art facilities for smooth operation of complete radar system and its accessories:**	
i.	The system will have dual polarization capability by simultaneous transmission and receive in both linear Horizontal and Vertical polarization.	
ii.	The system shall have user selectable Single polarization and Dual polarization mode of operation.	
iii.	The entire operation of the System shall be fully computer controlled and remotely manageable.	
iv.	Communication hardware and accessories for data transfer to central location.	

v.	Latest state of art computer system shall be used for the generation of data and its processing. At the time of supply of the stores, the latest state of art computer system and latest version of software shall be provided for the generation of data and it's processing, with OEM Licensed Version of Linux / Windows Operating System.	
vi.	Facility for radar data analysis and products generation at each of the sites inclusive of automatic dissemination of warnings and alerts are to be provided by the bidder.	
vii.	Display of data such as reflectivity, rainfall rate, horizontal winds at designated height, warnings etc., to be overlaid on GIS map.	
viii.	GIS based display should be accessible over the network through VPN or Internet.	
ix.	Web access to GIS based radar data display to be provided using web browsers such as Microsoft Internet Explorer, Firefox, Chrome etc.	
x.	Central server at Delhi for processing the radar data from all three radars to be provided.	
xi.	All equipment shall be of industry standard so as to enable easy up-gradation and maintenance.	
xii.	Standard software shall be offered for radar data processing and display and should be in use in any operational weather services in the world to fulfill the functional requirements along with capabilities which have been specified elsewhere in detail.	
xiii.	Diesel generator of minimum 20 KVA or suitable capacity required for continuous operation of entire DWR system including cooling system, along with minimum 100 L capacity fuel tank. Diesel generator shall have automated switching on and off feature in the event of normal electricity failure and resumption.	
xiv.	Two online UPSs, in redundant mode and each with minimum capacity of 15 KVA each or suitable capacity required for continuous operation of entire DWR system, along with separate battery banks. Each UPS should have at least 30 minutes power back-up and should be capable of taking the full load of radar.	

xv.	The supplied DG Set, UPS etc., should have CAMC/AMC service support facility in India.	
xvi.	NTP clock based on GPS for system clock time synchronization of the radar and the connected computers in the radar network.	
xvii.	The tentative locations for installation of the systems are mentioned in Annexure-VIII.	
xviii.	Installation of radar system will be on steel tower structure fabricated using hot dipped galvanized steel, at site. The standard of the steel and fasteners shall be certified for use in saline environment specified in Indian standard specification manual and specified explicitly. The specification shall meet minimum IS2062:2011 E250 Grade-C Steel for Channels and plates and IS1161:2014 & IS10748:2004 YST 310 grade steel for hollow pipes, IS1367 Grade8.8 for fasteners from reputed manufacturers and their details also shall be submitted.	
xix.	The tower structure shall be with height of 20m.	
xx.	For evaluation of tender, cost of the tower will be considered.	
xxi.	Appropriate cemented reinforced concrete base, leveling arrangement.	
xxii.	Bidder shall submit the full details of the hardware, including model numbers and the software proposed to be employed for meeting the requirements given herein.	
xxiii.	The Bidder has to clearly specify the way of achieving the sensitivity & detection capability (with ref. to OVERALL SYSTEM REQUIREMENTS) with supportive documents of claim and appropriate calculations for SSPA (three IF channel processing) transmitters. The calculations for achieving the required operational characteristics such as scanning capabilities, maximum range, maximum velocity, sensitivity and clutter suppression have to be provided. Confirmation with supporting images, test printouts etc., are to be provided.	

xxiv.	Lightning protection is to be provided for ensuring safety of the system and all tower mounted elements by the way of grounding cable through ground bar or other best suited mechanism.	
xxv.	IMD will take possession after appropriate test and evaluation meeting the specifications and accept the radar system after commissioning.	
xxvi.	It is the responsibility of the bidder to bear all the expenditure to operate the radar including manpower requirements, security and all radar peripherals till successful acceptance and commissioning.	
xxvii.	Transportation from the factory to the site will be the responsibility of the bidder.	
xxviii.	The entire work of installation and commissioning of the radar has to be carried out by the successful bidder.	
xxix.	The network link between the systems and central server will be provided by IMD; firm shall suggest suitable bandwidth for real time system control, monitoring and near real-time receipt of data at central locations for generating composite images and products of all the radars.	
b.	The price bids of technically qualified bidders alone shall be opened for evaluation on a date notified after evaluation of the techno commercial bid.	

2.OVERALL SYSTEM REQUIREMENTS			
Technical Specification			
General			
2.1	**Range of observation**	450 Km (Reflectivity) 250 Km (Velocity, Spectrum Width)	
2.2	**Range resolution**	150 m or better	
2.3	**Max. Unambiguous Range**	250 km or better; consistent with PRF & 2nd trip echo recovery	
2.4	**Unambiguous Velocity (Minimum)**	30 m/s or better at 250 km , 60 m/s or better at 125 km with velocity ambiguity resolver	
2.5	**Detection capability**	13 dBZ or better at 230 km range	
2.6	**VSWR**	1.3:1	
2.7	**Scan Time**	10 elevation volume scan from -2deg to 30 deg with all base moments acquired in 8-minutes	

		or better consistent with accuracy stated in section 2.44.	
	Transmitter		
2.8	**Transmitter Type**	High power Solid State Power Amplifier (SSPA)	
2.9	**Frequency Range**	5.45 GHz - 5.65 GHz	
2.10	**Transmitted power**	Required to meet 13 dBZ at 230 Km as per Point No.2.5.	
2.11	**Pulse repetition frequency**	To meet Range and Velocity requirement as per Points No. 2.3 & 2.4	
2.12	**Pulse width**	NLFM based pulse width required to match the range of observation and detection with Range side lobe less than 35dB.	
2.13	**Transmitter Polarization**	Horizontal, Vertical, STSR (Simultaneous Transmit & Simultaneous Receive)	
2.14	**VSWR**	1.3:1	
2.15	**Safety Feature**	All necessary interlocks, status parameters and Analog parameters monitoring and logging should be incorporated for the safety of the subsystem and the personal. System should have the feature of blanking RF radiation for selective sector.	
	Antenna, Radome Tower		
2.16	**Antenna**	Parabolic Dish Antenna	
2.17	**Side lobe**	27 dB down from the main lobe to 12° and beyond 12° better than 30 dB.	
2.18	**Beam width**	1° or better	
2.19	**Azimuth steering**	360° with ±0.05° steps and 0-6 rpm	
2.20	**Vertical Steering**	-2° to +92° or better with ±0.05° steps	
2.21	**Polarization**	Horizontal, Vertical and STAR mode	
2.22	**Pointing accuracy**	0.1° (Tower deflection + Servo stability together)	
2.23	**Pointing resolution**	0.01° or better	
2.24	**Scanning rates**	Up to 6 rpm	
2.25	**Cross Polar Radiation**	better than 36dB	
2.26		operation mode:	

	Azimuth velocity	from 3°/sec (0.5 rpm) to 36°/sec (6 rpm) in both Clock-wise (CW) and Counter Clock-wise (CCW) directions. calibration mode: from 0.6°/sec (0.1 rpm) to 36°/sec (6 rpm) in both Clock-wise (CW) and Counter Clock-wise (CCW) directions.	
2.27	**Elevation velocity**	**operation mode:** from 3°/sec (0.5 rpm) to 18°/sec (3rpm) in both up and down directions **calibration mode:** from 0.6°/sec (0.1 rpm) to 18°/sec (3rpm) in both up and down directions	
2.28	**Acceleration in AZ & EL axes**	Minimum 10°/sec^2 during scan operation, should meet scan time specified in 2.7.	
2.29	**Angular data resolution in AZ & El axes**	0.01° or better using 21 bits or better absolute angle Encoder	
2.30	**Power handling**	To meet the specification 2.9	
2.31	**Operating modes**	**Standby mode**: System Power ON **Operate mode**: Scan (With specified velocity magnitude and sign) or Pointing mode (specified reference position). Scan of 0.5 to 6 RPM in Azimuth. Volume scan, azimuth sector scan, elevation sector scan (RHI scan), Designate mode and computer designate mode. **Calibration Mode**: Provision for pointing & follow the Sun for Sun calibration, follow any trajectory precisely in External computer Designate Mode for balloon calibration and bore sight calibration for Antenna pattern measurement. Scan of 0.1 to 6 RPM in Azimuth. **Diagnostic Mode**: Provision to diagnose important functionality.	
2.32	**Tower height**	a) 20 m nominal height. Tower	

		structure should withstand 250 kmph (Survival/operational requirement). b) The tower design should support overall pointing accuracy specified in 2.22 at wind speed of at least 130 kmph (Operational requirement). c) The structural design should be certified by a competent third-party authorized agency.	
2.33	**Scan strategy**	Different scan strategies in a scheduler. Automatic change over between different scan strategies shall be possible.	
2.34	**Radome**	c) Type: Rigid spherical in shape (curved panels), Installed on top of the building, covering antenna dish and pedestal, with adequate space for maintenance personnel to enter and work with roof fetch. d) Transmission Loss: better than 0.2 dB one way.	
2.35	**Wind load**	Up to 250 km/hr.	
2.36	**Lightening Protection**	Lightening rod with dual ground wires. Aviation warning Lamp attached to the lightening arrester. Suitable to the site selected.	
2.37	**Obstruction / Avionic lights**	Twin Light (LED) System with solar powered & auto switch ON/OFF.	
Receiver			
2.38	**Type**	Multichannel Digital receiver for Dual Polarization (H&V), STAR mode operation or suitable for SSPA based Transmission	

		and reception. Provision to sample Transmitter pulse for matched filtering.	
2.39	**Noise figure**	3 dB or better	
2.40	**Linear dynamic range**	95 dB or better	
2.41	**Minimum Discernable Signal**	-108 dBm or better @2MHz Bandwidth at IF signal output i.e., Signal Processor input).	
	Radar Signal Processor		
2.42	**Doppler processing**	Pulse Pair and FFT selectable	
2.43	**Clutter suppression**	a) Clutter Elimination for ≥40 dB. b) The system shall have provision for identifying and filtering non-meteorological echoes such as, Sea clutters, bird/insects, chaffs, etc. based on polarimetric measurements.	
2.44	**Parameters to be measured and displayed**	**a) Reflectivity (Z_H & Z_v)** Max: 65 dBZ or better Resolution: 0.01 dB Accuracy: ⩽ 1dB @ SNR>10dB; r=230Km; Δr<900m **b) Radial velocity (V_H)** Max: ±30m/s Resolution: 0.1 m/s Accuracy: ≤1m/s @SNR >10dB; σ_v=4m/s, r= 230Km; Δr<300 m **c) Spectrum Width (σ_H)** Max: 10m/s Resolution: 0.1 m/s Accuracy: ≤2m/s @SNR > 10dB; r=230Km; Δr<300 m **c) Differential reflectivity (Z_{DR})** Dynamic range: -5 to 8 dBZ Resolution: 0.01 dB Accuracy: ≤0.2dB @ SNR>10dB; r=230Km; Δr<900m	

		d) Differential phase (Φ_{DP}) Dynamic range: -180 to 180 deg Resolution: 0.1 deg Accuracy: ≤2deg @ SNR>10dB; r = 230Km; Δr<900m **e) Correlation Coefficient at zero lag (ρ_{HV})** Dynamic range: 0 to 1 Resolution: 0.005 Accuracy: ≤ 0.05 @ SNR>10dB; r= 230Km; Δr<900m *System design parameters should satisfy all accuracy requirements and will be tested with simulated signal at coupler port.*	
2.45	**Calibration**	a) Standalone Radar Simulator with Dual Channel RF output from IQ Data Playback shall be provided for Radar data processing. b) The system shall have the provision for complete automation of the calibrations routines to verify system parameters and receiver calibrations. c) Provision for quick calibration check to ensure system sensitivity and dynamic range. d) Provision shall be made for programmable and auto run for absolute internal calibration to ensure reliability of polarimetric parameters at user defined intervals and display the current values to monitor the system health and accuracy of the Radar. e) Provision shall be given for external calibration through standard external equipment.	

		f) There should be a provision for automatic update of Radar calibration parameters. g) Transmitter peak power measurement. h) System noise figure measurement.	
2.46	**Sun & Sphere calibration**	a) Automatic software driven and manual mode operation for verifying pointing accuracy 0.1 degree. b) The system shall be made to point towards sun for establishing the gain and pointing accuracy of the antenna; stability and reliability of receiver chain using solar flux (sun) values known from other sources. c) Procedure shall be provided and to be demonstrated during FAT & SAT. d) Script based execution of such measurements and saving of results are expected as a part of such provision. e) The system shall be made to point towards a metal sphere for establishing the Radar Constant of the system. f) Procedure shall be provided and to be demonstrated during FAT & SAT. g) Script based execution of such measurements and saving of results are expected as a part of such provision.	

2.47	**Base Parameters to be measured**		
	Real time Processing	FPGA based or equivalent for Base Product generation (required FPGA Board and Workstations shall be provided)	
	Parallel Signal processing Computing Capability.	10Gbps or higher Broadcasting of I&Q data (each 32bit resolution) for multi node signal Processing	
	Data Outputs (All Base Products)	16bit, 8bit (Configurable)	
	Simultaneous Horizontal / Vertical Transmit		
	Corrected reflectivity H/V	Zh, Zv [dBZ]	
	Uncorrected reflectivity H/V	UZh, UZv [dBZ]	
	Radial Velocity H/V	Vh, Vv [m/s]	
	Spectral width H/V	Wh, Wv [m/s]	
	Cross correlation coefficient	RHOHV	
	Differential phase	PHIDP [°]	
	Differential reflectivity	ZDR [dB]	
	Clutter power H/V	CCORh, CCORv [dB]	
	Signal quality index H/V	SQIh, SQIv	
	Signal Noise Ratio	SNRh, SNRv [dB]	
	Inphase / Quadrature signal H/V	Ih, Iv, Qh, Qv	
	Power spectrum H/V	PsH, PsV	
	Horizontal		

	Transmit		
	Corrected reflectivity	Zh [dBZ]	
	Uncorrected reflectivity	UZh [dBZ]	
	Radial Velocity	Vh [m/s]	
	Spectral width	Wh [m/s]	
	Depolarization Ratio	LDR [dB]	
	Signal Noise Ratio	SNRh [dB]	
	Signal quality index H	SQIh	
	Clutter power H	CCORh	
	Vertical Transmit		
	Corrected reflectivity	Zv [dBZ]	
	Uncorrected reflectivity	UZv [dBZ]	
	Radial Velocity	Vv [m/s]	
	Spectral width	Wv [m/s]	
	Depolarization Ratio	LDR [dB]	
	Signal Noise Ratio	SNRv [dB]	
	Signal quality index V	SQIv	
	Clutter power V	CCORv	
2.48	**Radar Controller**	a) Workstation-based radar controller with user friendly GUI. Radar operation parameters (including selection of Wave form parameters, scan parameters, Signal Processing parameters, Operation modes selection, Scan strategy selections, etc.) should be selectable through the workstation-based Radar Controller software. Scheduler for long time observation also to be provided. b) Two Workstations of latest suitable computer	

		configuration at least 2 Nos. of Intel latest Xeon silver processor, 64 GB RAM, 2TB SATA HDD, NVIDIA 8GB Graphics Card and 10G NIC and 27-inch IPS LED Monitor. Both Workstations shall be used for operation and control of the Radar in hot Redundancy mode. Workstation shall have Raid 1 configuration of storage to avoid any loss of data. c) One portable computer (laptop) of latest version/ configuration, capable of replacing functions of (a) and (b) d) One 55" (inches) UHD 4k LED display. e) Radar controller shall display system Health Check parameters including status, interlocks & important analog parameters of all the subsystems. f) There shall be provision to record and replay from I&Q data. g) Provision for web based remote Radar control, monitoring and operations. h) Super user and user level configurations shall be provided for Radar Controller and the details will be given during implementation stage.	
2.49	**Display, Archival, Product Generation and Peripherals**	a) Two Workstations of latest suitable computer configuration at least 2 Nos. of Intel latest Xeon silver processor, 64 GB RAM, 2TB SATA HDD, NVIDIA 8GB Graphics Card and 10G NIC and 27- inch	

		IPS LED Monitor. Both Workstations shall be used for display and NRT product generation of the data and shall have Raid 1 configuration of storage to avoid any loss of data. b) Two workstations with latest configuration at least 2 Nos. of Intel Xeon silver processor, 64 GB RAM, 2TB SATA HDD, NVIDIA 8GB Graphics Card and 10G NIC and 27-inch IPS LED Monitor. Workstations shall be used for Offline product generation and networking/communication purpose. c) GPS based NTP Server for Network Clock Time Synchronization. d) NAS storage with RAID-6 dual parity, Dual Controller, Total cache 48GB or higher, 4 x 10GbE Ethernet Ports, support NFS v3, CIFS or higher, with capacity 20TB or higher with NLSAS/ SSD). e) Provision for recording and playback of I&Q offline data as well as storage of I&Q data in NAS Box. Minimum 1 hour data archival with full bandwidth. f) Color laser printer (600 dpi minimum) to get Hard copy output. g) Provision for web browser based remote Radar control, monitoring and operations. h) Data Archival as in section.3. (Data Archival)	

		of this chapter. i) Archived data format as in section.4. (Data Format) of this chapter. j) All software licenses shall be multiuser and open, without any restriction / hardware lock / soft-lock. All OS and radar software licenses shall be in the name of IMD.	
		Power Requirements	
2.50	**Power**	Capable of operating 400V ±10% V, 50 ±2% Hz in Three phases.	
2.51	**Online UPS**	Two online UPSs, in redundant mode and each with capacity of 15 KVA or minimum capacity required for continuous operation of entire DWR system, whichever is higher, along with changeover facility for switching to standby UPS, to run the whole radar system for at least 30 minutes. Catering to required voltage stabilization with a power factor suitable for the system.	
2.52	**Diesel Generator**	At least 20 KVA or suitable Diesel Generator Set with AMF panel for automatic turn ON when mains fails and capable to takes up the load of all the essential components and accessories of the Radar system required for operation). The DG set should be silent with a separate canopy for operations in all weather conditions.	
2.53	**Enclosure**	A well-furnished two storied, pre-fabricated cabin-size of at least 400 Sq feet to meet all operational requirements which includes operational room, Radar Officer room, UPS, stores, Kitchenette, Rest room, Washroom, along with ACs, water dispenser, RO water filter, electric kettle, microwave oven, induction top with induction utensils, furniture and	

		separate outside canopy housing for D.G. set to make it convenient for operational staff to work round the clock as per Annexure-XII.	
		Features	
2.54	**General**	The radar system should be having required menu driven software with GUI controls for: 1. Operating the radar. 2. Setup of operational parameters. 3. Configuration of weather products. 4. Generation of alerts and warning, 5. Configuration of Network Communication Hardware used in the system. 6. Setup of display overlayed on map of India with political boundaries of international borders, states and district boundaries. 7. Automatic calibration for antenna, dynamic range, etc. 8. Monitoring the health of the radar using BITE. 9. The process of setup of various scan parameters should be easily accessible to operators using GUI. 10. Base Product generation. 11. Base Product display with zooming options, latitude, longitude display, selectable parameter display and color coded 12. Simultaneous display of data having more than one parameter. 13. Requisite software protection for denying unauthorized access	

		to be provided. 14. System should be operated remote monitoring and control including equipment power supply 15. The base data (output of radar processor) shall be stored automatically on hard disk and NAS in compressed form. At least three month past data shall be available on the local computer disk at a time. 16. Radom should be Tuned A sandwiched or equivalent, suitable for operating coastal / snow regions / high altitudes 17. The entire radar system shall be mounted on a steel tower which will be delivered to the consignee ready for operation at any selected site. Appropriate cemented concrete base, hydraulic leveling arrangement (if required), networking hardware, diesel generator (that takes up the load of all the essential components and accessories of the Radar automatically for long time when utility power fails), UPS with batteries, fuel storage tank for generator, etc., shall also be provided. Diesel generator shall have automated switching on and off in the event of normal electricity failure. All system should have capability to shut down in the event of long-time power failure, shortage of diesel to operate the DG etc. 18. Air-conditioned equipment shelter with adequate space for	

		housing all radar electronic equipment's, the work station, UPS, stationery, manuals, tools etc. 19. Lightning protection is to be in place ensuring safety of the system and mounted elements by the way of grounding cable through ground bar or other suitable mechanism. 20. The electrical earthing (maintenance free), requirement of various peripherals inclusive of radar, has to be taken care and appropriate early streamer emission lightning protection system with lightning flash counter along with deep chemical gel and copper plate based earth pits shall be provided by the bidder/manufacturer. 21. The project is to be executed on a turnkey basis and all items shall be supplied and complete the installation and commissioning within the stipulated time as mentioned in the original document. 22. The supplied DG Set, UPS etc., should have a service facility in India. 23. The antenna should be mounted on tower of height 20 meter from the ground/shelter, for better exposure. 24. Tower shall be provided with a lift to access the top floor (without hindering antenna elevation axis operation) for service / installation / inspection engineers	

		(4-person) and not for material movement. 25. All protection for the movement of service personals shall be provided in the equipment bays/floors. 26. The antenna mount should be equipped with suitable leveling system to ensure horizontal alignment of azimuth and elevation axis. Suitable readers shall be included with an accuracy of 0.2 degree or better. 27. Housing of the electronic subsystem may be considered at one stage below the antenna housing floor to avoid losses. However, this is purely at the discretion of the bidder taking care over all link budget and performance of the system which is essence of the contract. Suitable air conditioning system also should be provided as and where required to operate all subsystems as per the specification. 28. IMD will take possession of the radar after commissioning. Cost involved of the system (Radar, inclusive of all the deliverables as per this document) and operator till then shall be borne by the supplier. 29. Transportation from the factory to the site will be the responsibility of the bidder/ manufacturer. 30. The entire site preparedness and custom tuning/positioning is to be fully borne by the	

		bidder/manufacturer and the work is to be undertaken by the bidder/manufacturer in the presence of IMD engineers. 31. The entire work of installation and commissioning of the radar has to be carried out by the bidder/manufacturer, though IMD may station few of its officials at the site for guidance. 32. Communication hardware for data transfer to central location. Contractor shall provide all necessary Communication hardware i.e. Firewall (UTM Protection 24x7 FortiCare plus Application Control, IPS, AV, Web Filtering and Antispam Services), EtherNet Switch, FTP Server (one of the workstation may be configured as ftp server also) to Transfer the data to external agencies and to a central location identified by IMD 33. The network link between the radar system and central server (At Delhi) will be provided by IMD; firm shall suggest suitable bandwidth for real time system control and monitoring; a near real-time receipt of data for generating composites of all the radars.	
2.55	**Software**	a) The system should have proven software for data processing and display. b) The offered software should be a standard software and in use in any National Weather Service as per Chapter-3, General	

		Requirement under(a)Clause-xiv.	
3. ARCHIVAL OF RADAR DATA			
a)	The base data which includes Reflectivity, Velocity, Spectrum Width and Dual Pol. Parameters (output of radar processor) shall be stored automatically on hard disk. Network Attached Storage on RAID 5 as per 2.49(d) to be provided for archival of Base Parameters data		
b)	A-4 size high resolution Ink tank Color Printer (600dpi) for taking hard copies of images and products shall be provided.		
c)	External Blue ray DVD writer with 12 disks of dual layer Blue ray DVD R/W and 50 disks of Blue Ray DVD/R at each site to be provided.		
d)	Provision to record, store and offline playback for analysis of I & Q data.		
e)	The Annual Maintenance Contract with service providers should include a clause that Hard Disk should be retained by the organization (IMD), even if it is faulty. This excludes any hard disks / flash disks or storage media that contains any data of IMD. While disposing the Hard Disk it should be destroyed so that data cannot be retrieved.		
4. DATA FORMATS			
4.1 Digital Data			
a)	System should be capable of archiving of raw data (I & Q) and generating Polarimetric Doppler Weather Radar Base data and products in BUFR, NETCDF, GRIB2, HDF5, KML, KMZ formats.		
b)	Data should be converted from RAW, RAINFALL mm/hr, RAINFALL ACCUMULATED in mm, Horizontal winds at user selected levels in height, to Cartesian coordinates. Such data should also be available in HDF5, NetCDF.		
c)	Stand-alone BUFR, NETCDF, HDF5, GRIB2, encoding and decoding software on Licensed Linux/MS-WINDOWS platform should be provided. The software should be able to convert the radar data to formats as per user requirements and IMD specifications mentioned at 4.1(a) above.		
d)	NetCDF format data shall be provided in NCAR CFRadial, and IMD-NetCDF format. Details of		

	IMD-NetCDF format, HDF5 and BUFR-OPERA format file as required by IMD shall be provided to successful bidder for developing software applications.	
e)	Existing central server system at IMD HQ, New Delhi is based on Vaisala (SIGMET) IRIS software for centrally generating various products including mosaic and various data formats from RAW data & data products. The successful bidder should provide necessary provision to ingest their radar data in a compatible format for use with already available central server at New Delhi.	
f)	Data format if proprietary should be disclosed with decoding software codes.	
g)	The successful bidder shall provide data format converter from Raw Data format as well as products to ASCII.	
	4.2 Image data	
The system should be capable of automatic generation of images in (JPEG, GIF, TIFF, PNG) format files for publishing on web site. Images should have high resolution for full HD displays and also for web pages. Following file naming conventions are to be implemented for automatic generation of images after completion of each volume scan. A) caz_stn.gif Max Z 250km range B) ppz_stn.gif PPI Z 450km C) ppi_stn.gif PPI Z 150km D) ppv_stn.gif PPI V 250km E) vp2_stn.gif VVP 40km Range/ up to 10 km height F) sri_stn.gif SRI 150 km G) pac_stn.gif PAC 150 km accumulated rain for 24hrs		
	5. SOFTWARE	
	5.1 FEATURES	
	The radar system should be having required menu driven software with GUI controls for:	
	A) Operating the radar. B) Setup of operational scan parameters. C) Configuration of weather products.	

	D) Generation of alerts and warning, E) Setup of communication channels. F) Setup of display overlaid on map of India with political boundaries of international borders, states and district boundaries. G) Automatic calibration for antenna, receiver, dynamic range, etc. H) Monitoring the health of the radar using BITE. I) The process of setup/change of various scan parameters should be easily accessible to operators using GUI. J) Product generation. K) Product display. L) Generation of audio-visual warnings based on user defined thresholds for severe weather detection. M) Automatic transmission of warnings (visual and text) to users via communication channels. N) Facility to reprocess and display products from past data. O) Simultaneous display of data having more than one parameter. P) Requisite software protection for denying unauthorized access to be provided. Q) The system shall perform optimized correction of reflectivity data for attenuation effects from heavy rain based on algorithm using polarimetric parameters such as ZDR, Φ_{DP}, K_{DP} and ρ_{HV}.	
	5.2 SOFTWARE PRODUCTS *I. The System shall be capable of generating the following products from the base data output from the radar signal processor. Algorithms and references for all the products listed below and supplied should be provided.*	
	III. The licenses of all softwares being installed with the radar system shall be in the name of Director General of Meteorology, IMD or any competent authority and the details of all softwares used in the radar system should be mentioned.	

	5.2.1 Base Products	
a)	The un-filtered I & Q data archival and playback facility to generate base products.	
b)	The system shall generate base data comprising for **Z, V, σ** and Polarimetric products after applying different corrections to raw data (like attenuation effect due to precipitation, earth curvature, range normalization, beam blockage, interference due to external sources, non-meteorological echoes, second-trip recovery, ground reflection, bright band correction, etc.)	
c)	Products are to be generated based on user defined parameters already selected and stored in workstation and NAS against the various scan schedules.	
d)	Provision also should be available to generate all products in offline mode using the archived raw data.	
	5.3 Primary Products	
	5.3.1 Maximum Display (Z,V,σ) The System shall compute and display maximum values of base data products (Z, V and σ) in horizontal (East West and North South) and vertical columns between users defined heights and also display the partial images in a single frame with side panel heights to a scale of 2km covering 0 -18 km.	
	5.3.2 **PPI (Plan Position Indicator)** (Z,V,σ) The system should be capable of generating the PPI product for all types of raw data at user selectable elevation angles from lowest to highest elevation in the scheduled scanning procedure.	
	5.3.3 CAPPI (Constant Altitude Plan Position Indicator) The System shall interpolate from the volume scan data set for a geo-horizontal plane at user vertical defined height and display the same pertaining to user selectable data form Z, V and σ from 1 km to 18 km height.	
	5.3.4 PCAPPI (PSEUDO CAPPI) The system shall incorporate data form the highest elevation scan near the radar and from lowest	

	elevation scan for areas far away from the radar for which radar beams are not intersected by user defined plane for CAPPI and display same pertaining to data selected by user (Z, V and σ) from 1 km to 18 km height.	
	5.3.5 VCUT (Vertical Cut) The system shall interpolate all the base products (Z, V and σ) in any vertical plane passing through user defined two points and display the same for the user selectable parameters.	
	5.3.6 EBASE (ECHO BASE) The system shall identify from the volume scan data the minimum height up to which the user defined threshold value for each base data exists and display them for user selectable data.	
	5.3.7 ETOP (ECHO TOP) The system shall identify from the volume scan data the maximum height up to which the user defined threshold value for each base data exists and display them for user selectable data.	
	5.3.8 HAIL WARNING Based on reliable hail warning algorithm, the system shall generate a hail warning symbol at the appropriate place in the PPI display in one or more of the operator chosen fields.	
	5.3.9 HYDROMETEOR CLASSIFICATION The system shall be capable of generating a product for classification of hydrometeors based on Polarimetric parameters (Z_{DR}, Φ_{DP}, K_{DP} and ρ_{HV}). Provision for changing parameters in a scientific way for customization of the hydrometeor classification is a required. Hail detection based on this classification shall be one of the products in this class.	
5.4 Derived Meteorological Products:		
	5.4.1 Velocity Products The system shall generate and display following velocity products:	

	A) Radial velocity versus the azimuth for a fixed elevation and a fixed slant range (VAD). B) Radial velocity at a fixed user defined range on height and azimuth angles (Radial velocity display for fixed range, azimuth angles for various height and azimuth). C) Horizontal wind velocity and wind direction using barbs in a vertical column above the radar site for different heights including divergence & convergence product.(VVP_1) D) The vertical Profile of the horizontal winds derived from the Radial Winds within 40 km range of radar and 10 km height using standard algorithm in the form of Wind Barbs showing wind speed and direction in the time series manner for a user selectable time duration (VVP_2) E) Horizontal wind vectors (UWT) using barbs at user defined layer height with or without underlay of reflectivity or velocity in PPI / CAPPI format.	
	5.4.2 Hydrological Products: The system shall generate and display following hydrological products: A) Rainfall intensity using polarimetric moments as well as Z-R in a user selectable surface layer and constants with constant height above ground. Provision of specifying freezing layer height dynamically. B) Instantaneous estimation of water content (VIL) residing in a user defined atmosphere layer in the atmosphere to be displayed in PPI type of display. C) Precipitation accumulation (PAC) using polarimetric and Z-R in a user definable time period. D) Rainfall amount in user defined catchment basins for user defined time span. E) Provision for putting river basin map overlay as per user requirement. F) Rainfall intensity, rainfall rate and	

	accumulation products shall have an option to be adjusted in real time by Rain Gauge, disdrometer data. Rain gauge and disdrometer data shall be displayed along with the radar data. G) Adjustment of rainfall rate by appropriate rain gauge or disdrometer data shall be possible. H) The system shall convert data of reflectivity and polarimetric measurement to horizontal maps of rainfall intensity. I) The system shall be capable of generating precise rain rate information using combination of polarimetric parameters as well as Z(h) J) The system shall use algorithm based on polarimetric parameters for correcting rain rate estimation errors arising out of hail, non-meteorological echoes and attenuation.	
	5.4.3 Aviation Products A) The system shall evaluate derivatives of wind velocity in radial, azimuth, elevation, North South, East West directions and derive horizontal, vertical, and three-dimensional shears B) The system shall also be able to generate warning product on microburst, and wind shears beyond adaptable threshold levels. C) The system shall evaluate maximum turbulence within user defined atmospheric layer and display in top view.	
	5.4.4 Warning and Forecasting Products:- a) System shall generate and display warning symbols for thunderstorm, hailstorm, dust storm, meso-cyclone, convergence, divergence and gust fronts. b) System shall be capable of evaluating speed and direction of movement of weather systems. c) System shall also be capable of warning if any of the conditions defined by the user are reached or fulfilled on reflectivity, velocity, VIL, rainfall intensity, rainfall accumulation and wind shear.	

	d) System shall be able to detect tornado and gust fronts associated with storms and issue visual and text warning message.	
	e) Workstation with TITAN software running in real time should be provided and made available with appropriate data intake.	
	5.5 Alphanumeric Products	
	The system shall also be able to provide all the product data (i.e., base, primary and derived) in ASCII tabular form.	
	6. Built in Test Equipment (BITE).	
	A modern system making use of latest technology for continuous monitoring of the operational status of hardware and software functions and utilities of the radar system shall be supplied.	
a)	BITE processor shall measure and process a number of real time analog and digital parameters in the radar system and generate and display the error message whenever their value falls outside the specified permissible range.	
b)	BITE processor shall continuously monitor input and output signals of every module/PCB for any deviation from the standard values.	
c)	Audio alarm indication for occurrences of faults is to be provided.	
d)	Centralized monitoring of status of radars networked.	
7. **Provision for Networking & Communication system for data transfer to central location:**		
a)	Provision shall be made with suitable communication hardware & software for real time transfer of digital radar data and images generated in real time through networking to control and monitoring centres and central server at IMD HQ, New Delhi.	
b)	All networking components required at radar site as well as command and control centre shall be provided by Bidder.	
c)	Necessary interface shall be provided for sending radar data through GSM, VPN and internet.	
d)	These centres should be able to monitor and control the functions of the radar. Data from respective	

	radars under each centre will be utilized for real time display facility for monitoring the health parameters as well as the weather data acquired by radars in operational mode.	
e)	The communication link will be provided by IMD. Bidder shall specify the bandwidth requirement.	
f)	Deliverables for control and command centres are to be provided as per Annexure-VI.	
g)	The radar data is to be converted in a compatible format for use with already available central server of the existing Doppler weather radar network of IMD based on IRIS (SIGMET) software of M/S Vaisala.	
h)	Data of all radars to be over layed on GIS map with option to include underlay maps from Google, Open street map or ESRI, Arc GIS, etc. Locally installed and accessible GIS server using Open street map to be provided. The Products which are to be overlayed are: • Reflectivity • Rainfall • Warnings based on Rainfall, Velocity, Hydrometeor Classification.	
i)	Boundary of states will be provided by IMD as shape files.	
	8. INSTALLATION	
a)	Bidder shall take into consideration that the system is required to be installed on site on a Galvanized Steel Tower with nominal height of 20 m upon which radar antenna and radome shall be installed. Towers should be able to take the dynamic load of the radar system and its accessories while in operation, (with due consideration for the gusty wind load) and shall be erected by Bidder.	
b)	Walk/inspection space of about a meter width all around the radome base with a safety railing of 1.5m height is recommended for servicing of Radome. The railings should not degrade the signals of the radar during regular operations.	
c)	The entire responsibility of civil construction/site preparedness for installation of the radar and its peripherals shall be the responsibility of the bidder.	
d)	Prerequisite for both civil & electrical requirements for installation of radar be clearly mentioned separately, inclusive of suitable diagrams of antenna	

	& radome installations, along with the technical bid.	
e)	The required number of electrical earthing based on latest technology i.e., Chemical Gel earthing is required for various peripherals inclusive of radar, has to be provided by Bidder.	
f)	Suitable Lightning Arresters for protecting the radar with reliable lightning protection system with deep chemical gel and copper plate based earth pit shall be carried out by the bidder.	
g)	Aviation warning indicator lamps shall be supplied and installed by the bidder on the top of the antenna/radome at appropriate height.	
h)	All other requirements such as power and communication facility etc. will be arranged by IMD for enabling tower construction and installation/ commissioning of radars of each respective site.	
i)	IMD may not facilitate the accommodation and transportation arrangements for the personnel of the installation team of the bidder.	
	9. LOCATION	
	List of tentative sites for installation of Radars is attached vide at Annexure-VIII.	
10. TESTING AND ACCEPTANCE		
a)	The bidder shall submit detailed test plans for Factory Acceptance Testing (FAT) prior to shipment and Site Acceptance Test (SAT) after installation at site for system acceptance. The test plan shall require concurrence by the IMD.	
b)	The objective of the tests shall be the verification of performance of the system as per the specifications and functional requirements as per TENDER DOCUMENT.	
c)	As per the mutually agreed test procedures, FAT shall be carried out at the factory premises prior to shipment. The equipment shall be shipped only after satisfactory conclusion of the pre-shipment acceptance testing (FAT).	
d)	As per the mutually agreed test procedures, acceptance test should be carried out at each radar site after installation. Bidder shall arrange for necessary test equipment.	

e)	Any defects / deviations noticed during the site acceptance tests shall be rectified within a maximum period of one month from the completion of the tests. After such rectification, the tests shall be repeated to verify the rectification.	
f)	Within 30 days of installation of each system, bidder should secure acceptance of the radar and its peripherals as a whole system.	
	11. SYSTEM COMMISSIONING	
	After the satisfactory completion of the site acceptance tests, bidder shall demonstrate the reliabilities and capability of the system to be operated continuously and satisfactorily for a period of 15 days endurance test of the complete radar system, after which it will be said to be "*Commissioned*".	
	12. WARRANTY:	
a)	Warranty shall remain valid for three years after the system has been commissioned and accepted by IMD as per terms of the contract. The warranty shall also include all third party bought out items / subsystems including Tower, Computers, Generator Set and UPS, etc. OEM certification of warranty for the third-party items is to be provided.	
b)	This warranty clause is applicable at all individual radar sites.	
c)	Upon receipt of notice about faults, Bidder shall repair or replace the defective goods or parts thereof, free of cost, at the site.	
d)	Bidder shall take over the replaced parts/ goods after providing their replacements and no claim, whatsoever shall lie on IMD for such replaced parts/ goods thereafter. This excludes any hard disks / flash disks or storage media that contains any data of IMD.	
e)	The bidder shall supply the software updates, if any, during the warranty and CAMC period, free of cost.	

f)	If Bidder, could not meet the uptime of 85 days in a quarter of 90 days at the time of payments and there is a failure of the system for more than the criteria stipulated then a quarterly penalty amount of 0.5% of the total CAMC cost per day for that radar, for days it is down, will be deducted from the performance guarantee amount, subject to an upper ceiling of 10% of the total equipment cost during warranty period and 10% of the total AMC cost during the AMC period. Furthermore IMD may proceed to take such remedial action(s) as deemed fit by IMD, at the risk and expense of Bidder and without prejudice to other contractual rights and remedies, which IMD may have against Bidder.	
g)	Maximum two weeks shutdown for Annual maintenance shall not come under the clause. Delay due to external factors and natural calamity beyond human control will be exempted.	
h)	During warranty period, bidder is required to visit consignee's site at least once in three months commencing from the date of acceptance at site for preventive maintenance, calibration and various types of checks of the goods/ equipment and a detailed report consisting of all test procedure values etc. must be submitted at Upper Air Instrument Division (UAID), India Meteorological Department, New Delhi along with satisfactory certification by the UAID (IMD).	
i)	During warranty period, the bidder shall deploy trained manpower at each site preferably Graduates in Engineering in Electrical / Electronics / Communication for operational maintenance for round the clock support.	
	13. TRAINING:	
a)	Bidder shall provide factory training in operation, maintenance, calibration and fault identification of the radar system along with modification & up-gradation in application software to 4 persons from IMD at the factory premises for a period of 3 weeks.	
b)	The training shall also include lectures on the system design, computer hardware/software, operation and such other aspects which are considered essential for optimum utilization of the radar system.	
c)	Onsite training in operations and first level fault identification to be provided for a period of five	

	working days.	
	14. DOCUMENTATION:	
a)	Bidder shall furnish two copies of the documentation (detailed below from b-m) in well-bound sets/volumes of good print quality for each radar site and two copies of the same to Radar Unit, UAID, New Delhi.	
b)	Soft copy of all the manuals should also be provided along with hard copy.	
c)	All standard manuals, technical data sheets and other pertinent information of functional, electrical and mechanical modules used in the System shall be included in the manuals.	
d)	Interface connectivity document has to be provided for hardware as well as software interfaces.	
e)	Detailed documentation of all the proprietary data formats, bit-by-bit information on the header and data patterns should be provided.	
f)	Free updates made to firmware, processing software and clarifications should also be supplied with relevant documentation during the period of warranty and CAMC thereof.	
g)	The system functional block diagram shall be laid out so that a user can readily understand and identify the major functions of the system.	
h)	The operating instructions shall include routine procedures, safety, and emergency procedures as applicable. These instructions shall include switch-on, standby, normal operating procedures and switch off procedures. The sequence of turn-on procedures shall be optimized for remote switching ON/OFF. The instructions shall provide assistance to an operator to use the System for optimum performance.	
i)	Sufficient illustrations shall be included to identify and locate all operating controls and indicating devices.	
j)	Layout and Schematic Assembly Drawings: Schematic Diagrams of all assemblies, modules shall be provided.	
k)	Parts List: Detailed parts list with part numbers shall be provided.	
l)	Algorithm of Products: The algorithms used in product	

	generation shall be supplied.	
m)	It shall be the responsibility of Bidder to provide detailed parts list of modules sourced. List of items imported and incorporated in the system should also be provided separately. Only such items may be used in the system whose technical details are made available by the manufacturer	
	15. PROJECT SCHEDULE:	
a)	**Delivery** First radar to be installed, accepted and commissioned within 12 months from the date of award of contract agreement. Rest of the radar systems shall be delivered, installed and commissioned within 18 months from the date of award of contract agreement in a phased manner. In this regard the bidder will submit the actual schedule along with time line for execution of installation and commissioning work for each radar. (i) Supply of all stores (for first radar) at site within a period of 10 months from issue of supply order. (ii) Installation of all equipment to test the first radar within one month after supply of equipment. (iii) Acceptance and commission of first Radar within one month after installation. (iv) Supply, installation, acceptance and commissioning of all the remaining radars within a period of 18 months from the issue of supply order.	
b)	**Preliminary Design Review** (PDR) will be held after one month from the date of award of contract where in the design of hardware & software to be delivered as part of the system will be discussed at the office of UAID, IMD, New Delhi (India).	
c)	**Critical Design Review** (CDR) will be conducted within six months from the date of award of contract where in the design along with performance parameters of the subunits will be discussed in details to ensure that the system achieves the performance parameters to be delivered as per TENDER DOCUMENT.	
16. Penalty clause/Liquidated damages clause (LD) for delayed stores & Services:		
The bidder shall deliver the goods and perform the services (delivery, installation, acceptance, and commissioning) under the contract within the time schedule specified by the IMD in		

the "List of requirements/ technical specifications" section and as incorporated in the contract agreement. The LD will be imposed if delivery schedule is not met as per Clause No. 20 of Chapter 2, at the rate of 0.5 % per week of the contract value of each radar.		
17. COMPLIANCE STATEMENT:		
a)	The bidder shall submit detail para-wise compliance statement in tabulated format mentioning full details with reference Para, Clause and page no. Of the bid for each parameter along with reasons for compliance/ non-compliance, if any.	
b)	The bidder shall also submit the details of references, reports etc. for each compliance giving name of technical manual, chapter number, page number and para and shall provide a copy of referred documents along with the technical bid.	
c)	Silence on any para or simply making a statement 'complied' without proper justification or reference will be considered as non-compliance.	
d)	All the claims with respect to any specification shall be supported by document along with bid document otherwise same may be treated as non- compliance.	
e)	Compliance matrix should be filled in at all points of TENDER DOCUMENT individually.	
f)	All pages should be signed and stamped.	
18. COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT (CAMC):		
a)	The bidder shall quote for CAMC for seven years subsequent to completion of warranty period.	
b)	The bidder shall submit the year wise lump sum amount of CAMC charges.	
c)	The amount charged for CAMC shall not be quoted as percentage of the tender cost / cost of equipment.	
d)	The CAMC charges shall be included for price comparison. The terms & conditions for the CAMC are enclosed at Annexure -V.	
e)	The Bidder shall deploy trained manpower at each site preferably Graduates in Engineering in Electrical / Electronics / Communication for maintenance round the clock.	

Annexure-XIII

Format for Affidavit of Self Certification regarding Local Content in a Doppler Weather Radar

Date: _____

I_____S/o, D/o, W/o_____, Resident of _____ do hereby solemnly affirm and declare as under:

That I will agree to abide by the terms and conditions of the policy of Government of India issued vide Notification – Public Procurement (preference to make in India) Order 2017 dated 15th June , 2017 and subsequently 04th June 2020 and 16th September. 2020.

That the information furnished hereinafter is correct to be of my knowledge and belief and I undertake to produce relevant records before the procuring entity or any authority so nominated for the purpose of assessing the local content.

That the local content for all inputs which constitute the said equipment has been verified by me and I am responsible for the correctness of the claims made therein.

That in the event of domestic value addition of the product mentioned herein is found to be incorrect and not meeting the prescribed value addition norms, based on the assessment of an authority so nominated for the purpose of assessing the local content, action will be taken against me as per Order No. P-45021/2/2017/-E.E.-II dated 15.06.2017.

I agree to maintain the following information in the Company's record for a period of 03 years and shall make this available for verification to any statutory authority: (Kindly fill up the below mentioned particulars)

i. Name and details of the Domestic Manufacturer (Registered Office, Manufacturing Unit location, nature of legal entity)
ii. Date on which this certificate is issued
iii. Doppler weather radar for which the certificate is produced

iv. Procuring entity to whom the certificate is furnished
v. Percentage of local content claimed
vi. Name and contact details of the unit of the manufacturer
vii. Sale Price of the Product
viii. Ex-Factory Price of the product
ix. Freight, insurance and handling
x. Total bill of Material
xi. List and total cost value of inputs used for manufacture of the Doppler weather radar
xii. List and total cost of inputs which are imported, directly or indirectly

For and on behalf of **(Name of the Firm/Entity)**

Authorized signatory (To be duly signed by the Board of Director)

ANNEXURE-XIV

Format for Non-Disclosure Agreement to be submitted by Successful Bidder before placement of order

[The Non-Disclosure Agreement needs to be signed by a person duly authorized by the bidder. A copy of the authorization by the bidder (copy of Board resolution or Power of attorney) should be provided along with the Non-Disclosure Agreement]
[Non-Disclosure Agreement to be submitted on duly notarized stamp paper of ₹100]
This AGREEMENT (hereinafter called the "Agreement") is made on the [day] day of the month [of month], [year], between, Director General of Meteorology, India Meteorological Department, Mausam Bhawan, Lodhi Road, New Delhi-110009, on the one hand, (hereinafter called the "Purchaser") and, on the other hand, [Name of the Successful Bidder] (hereinafter called the "Successful Bidder") having its registered office at [Address] WHEREAS

1. The Purchaser has issued a public notice inviting tender for manufacturing, installation and commissioning of 08 numbers Klystron based C-Band Doppler Weather Radars in India (hereinafter call the "Project" of the Purchaser);

2. The Successful Bidder to whom IMD's data is disclosed shall:
   a) Hold such data in confidence with the same degree of care with which the Bidder protects its own confidential and proprietary information.
   b) Use the provided data only as needed for the purpose of executing the project and strictly not for any commercial purpose; and
   c) Except with the explicit permission by the Purchaser, for the purpose of successful execution of the Project, the bidder shall not copy, duplicate or transmit electronically such data or knowingly allow anyone else to copy, duplicate or transmit electronically such data.
   d) Storage media replaced/removed during warranty and AMC will not be the property of successful bidder and will remain in the custody of the purchaser.
   e) While disposing the Hard Disk or any storage media it should be destroyed so that data cannot be retrieved.
   f) Licenses to the software issued to IMD will remain as their property and shall not be disclosed to any other third party.
3. The Agreement shall apply to all Information and Data relating to the Project being executed by the Successful Bidder under this Agreement.
4. Nothing contained in this Agreement shall be construed as granting or conferring rights of license or otherwise, to the successful bidder, in any of the information.

5. This Agreement shall benefit and be binding upon the Purchaser and the Successful Bidder and their respective subsidiaries, affiliates, successors, and assigns.
6. This agreement shall be governed by and construed in accordance with the Indian laws.

For and on behalf of the Bidder

_____(signature and company seal)_____
Name:
Designation:
Contact Details: