Tender Details

Tender No: ISTRAC/PURC/2020E0203801

Tender Date: 04/03/2020

Purchase Entity: PURCHASE

Tender Notice

Tender Notice No.ISTRAC/PURC/202000203801

GOVERNMENT OF INDIA, DEPARTMENT OF SPACE, INDIAN SPACE RESEARCH ORGANISATION, ISRO TELEMETRY TRACKING AND COMMAND NETWORK (ISTRAC), BANGALORE - 560 058.

e-Tenders are invited as per the details mentioned in the tender document which can be downloaded and bid to be submitted as per the Tender Schedule shown below after registering in our e-procurement portal https://eprocure.isro.gov.in. Interested parties are required to register themselves as vendors, if not already registered in our e-procurement portal https://eprocure.isro.gov.in by downloading plugins and help demos listed on the home page of the e-procurement link mentioned above to complete the vendor registration process. They can also seek help from help desk given on the home page for any technical help for registration and subsequent process. Vendors may please note that Vendor registration process in our e-procurement portal is to be completed to participate in this tender. For any help, Vendors may contact help-desk over phone No.020-67637500.
Tender Attachments

Technical Documents Only: These documents will be sent to Vendor

Attachment - I:
IDT00314700000000000isro05401.docx

Attachment - II:

Attachment - III:

Attachment - IV:

Attachment - V:

CAMC GENERAL TERMS

GENERAL TERMS AND CONDITIONS FOR CAMC:

1. Adequate number of mechanics and supervisors should be engaged, with proper materials, tools/plants for satisfactory operations and execution of the contract.

2. The supply of the materials and implements required for the work connected with the execution of the contract will be the responsibility of the contractor.

3. In case the contractor fails to carry out the works to the satisfaction of Department and if there is any disruption in the smooth functioning of the activities, Department reserves the right to make alternate arrangements for execution of work at the risk and cost of the contractor.
4. The contractor shall duly comply with all the requirements of the labour laws, viz., minimum wages act, wherever it is applicable, contract labour (Regulation and Abolition) Act, Workmen’s Compensation Act, Provident Fund Act and rules made thereunder, Employees State Insurance Act and other acts as applicable from time to time and shall keep Department fully indemnified and harmless against any action or proceedings, costs or claims, loss or any liability arising due to this contract at the instance of the labourer employed by the contractor, or if authorities under the respective acts and against breach of any of the provisions of the above said acts.

5. The contractors are wholly responsible for any accident and compensation payable to the personnel employed by them and working under their control. They should keep department fully indemnified against any claim in this regard.

6. The decision of ISTRAC shall be the final with regard to satisfactory maintenance of the contract and is binding on the contractor.

7. The Department shall be at liberty to recover Income Tax at source as applicable.

8. The contractor shall engage labourers who have completed 18 years of age only and they shall be physically fit and should not be suffering from any communicable diseases. Contractor shall be responsible for covering the risks of labourers and other technical personnel deputed for the servicing work at our premises.

9. The Department reserves the right to ask the contractor to dispense with the services of any labourer who is reported to be of doubtful integrity/unwholesome behaviour.

10. It shall be the sole responsibility of the contractor to settle disputes, if any, arising out of the employment between himself and the labourers engaged by him and the Department will not in any way be responsible in the event the labourers approach the competent authority under the act or the court. The entire expenses in this behalf shall be borne by the contractor.
11. The workmen employed by the contractor in our premises will have to strictly adhere to the discipline of the Department. Wherever necessary you will have to furnish your men with safety appliances and ISTRAC will not be responsible for accidents or injuries caused to your men during the course of work.

12. The contractor or his responsible representatives should be available in the premises to control his workmen and take down instructions from and carry out the servicing to the entire satisfaction of the Department.

13. The contractor shall make his own arrangements for safeguarding his material and the Department will not be responsible for any loss.

14. The contractor should arrange the work in the time stipulated, subject to security checks and restrictions of the Department. Contractor’s workmen should wear the badges assigned to them while working for identification.

15. If any of the personnel of the contractors shall break, deface, injure or destroy any part of the building in which they may be working or any building, road, kerbs, fence, enclosure water pipes, cables, drains, electric or telephone posts or wires, trees, grass or grass land or if any damage shall happen to the work while in progress, the contractor shall make good the same at his own expense or in default the department may cause the same to be made good by other agency at the risk and cost of the contractor.

16. Fall Clause:

The Service charges quoted by you shall in no event exceed the lowest charges at which you service machines of identical description to any other party during the period of this contract. If at any time during the said period you reduce the servicing charges of such machines to any other party, you shall forthwith notify such reduction or service charges applicable to the Purchase Officer, ISTRAC Bangalore and the charges payable under the contract for the servicing done after the date of coming into force of such reduction or servicing charges, shall stand correspondingly reduced.

FORM B
INSTRUCTIONS TO TENDERERS:

GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
ISRO TELEMETRY TRACKING AND COMMAND NETWORK (ISTRAC)
Plot No. 12 & 13, 3rd Main, 2nd Phase
PEENYA INDUSTRIAL AREA, BANGALORE –560 058
Phone No.: 080-28376383 Fax: 080-28094061 E-mail: purchase@istrac.org

INSTRUCTIONS TO TENDERERS AND TERMS AND CONDITIONS OF TENDERS FOR INDIGENOUS STORES ITEMS:

1. ISRO Telemetry Tracking and Command Network [ISTRAC] has implemented e-tender system for ONLINE tenders. ISTRAC invites offers through e-tender portal https://e-procure.isro.gov.in for the supply of items. The suppliers need to get enrolled in the e-tender portal to access tender and submit their offer online. Vendors need to have Digital Signature Certificate as detailed on our e-portal and corporate e-mail ID to register on the above portal. Only online tenders will be accepted. No Manual/Postal/courier/e-mail/Fax offers will be entertained. No Manual tender document will be issued by ISTRAC. Suppliers are requested to note and comply with the Instructions to tenderers for online submission of tenders through E-Procurement System indicated in the document “INSTRUCTIONS TO TENDERERS FOR ONLINE SUBMISSION OF TENDERS THROUGH E-PROCUREMENT”.

2. Sales Tax and/or other duties/levies legally leviable and intended to be claimed should be distinctly shown separately in the tender.

a. CST/VAT/SERVICE TAX:
With effect from 01.04.2007, Form-D has been withdrawn for Inter-State purchases by Government Departments. Accordingly, the suppliers have to indicate clearly the percentage of CST/VAT applicable. Service Tax if any applicable has to be clearly indicated.

b. EXCISE DUTY:

ISTRAC is eligible for Excise Duty Exemption under Ministry of Finance, Department of Revenue, Government of India, vide Central Excise Notification No.10/97-Central Excise, dated 01.03.1997 as amended by Notification No. 16/2007 dated 01.03.2007 and necessary Exemption Certificate will be provided.

3. As a Government of India Department, this office is exempted from payment of Octroi and similar local levies. Tenderers shall ensure that necessary Exemption Certificates are obtained by them from the Purchase Officer concerned to avoid any payment of such levies.

4. a) Your quotation should be valid for 90 days from the date of opening of the tender.

b) Prices are required to be quoted according to the units indicated in the price bid form. When quotations are given in terms of units other than those specified in the price bid form, relationship between the two sets of units must be furnished.

5. Preference will be given to those tenders offering supplies from ready stocks and on the basis of FOR destination/delivery at site.

6. (a) All available technical literature, catalogues and other data in support of the specifications and details of the items should be attached through online mode only.
(b) Samples, if called for, should be submitted free of all charges by the tenderer and the Purchaser shall not be responsible for any loss or damage thereof due to any reason whatsoever. In the event of non-acceptance of tender, the tenderer will have to remove the samples at his own expense.

(c) Approximate net and gross weight of the items offered shall be indicated in your offer. If dimensional details are available the same should also be indicated in your offer.

(d) Specifications: Stores offered should strictly conform to our specifications. Deviations, if any, should be clearly indicated by the tenderer in his quotation. The tenderer should also indicate the Make/Type number of the stores offered and provide catalogues, technical literature and samples, wherever necessary, along with the quotations. Test Certificates, wherever necessary, should be forwarded along with supplies. Wherever options have been called for in our specifications, the tenderer should address all such options. Wherever specifically mentioned by us, the tenderer could suggest changes to specifications with appropriate response for the same.

7. The purchaser shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portions of the quantity offered and the tenderers shall supply the same at the rates quoted.

8. All amounts shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.

9. The tenderer should supply along with his tender, the name of his bankers as well as the latest Income-Tax clearance certificate duly countersigned by the Income-Tax Officer of the Circle concerned under the seal of his office, if required by the Purchaser.

10. The Purchaser reserves the right to place order on the successful tenderer for additional quantity up to 25% of the quantity offered by them at the rates quoted.

11. The authority of the person signing the tender, if called for, should be produced.
12. For items having shelf life, those with maximum shelf life should be supplied if order is placed.

13. The goods / material offered should be strictly as per our specifications. Change(s) in specifications, if any, should be clearly indicated by the supplier in his quotation. The supplier should also indicate make/type No. of the materials / equipments offered.

14. The drawings, specifications, end-use, etc., given by ISTRAC along with the tender enquiry, are confidential and shall not be disclosed to any third party.

15. In case of two-part tenders, parties shall submit their offers as follows:

   a) Part-I – Technical Bid:

   Only Technical details shall be mentioned in this bid and shall not upload any details of price along with the technical bid. Vendor specified terms column is to be filled without indicating any price details. If any Price detail is mentioned in the Technical Bid such offer shall be rejected.

   b) Part-II – Price Bid:

   Only the price details along with applicable taxes and other cost if any shall be indicated in the price bid form.

TERMS & CONDITIONS OF TENDER

1. DEFINITIONS:
(a) The term ‘Purchaser’ shall mean the President of India or his successors or assigns.

(b) The term ‘Contractor’ shall mean, the person, firm or company with whom or with which the order for the supply of stores is placed and shall be deemed to include the Contractor's successors, representative, heirs, executors and administrators unless excluded by the Contract.

c) The term ‘Stores’ shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order including erection of plants & machinery and subsequent testing, should such a condition be included in the Purchase Order.

d) The term ‘Purchase Order’ shall mean the communication signed on behalf of the Purchaser by an Officer duly authorised intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the tender or offer of the Contractor for supply of stores or plant, machinery or equipment or part thereof.

2. PRICES:

Tender offering firm prices will be preferred. Where a price variation clause is insisted upon by a tenderer, quotation with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variation/s.

3. SECURITY DEPOSIT:

On acceptance of the tender, the Contractor shall, at the option of the Purchaser and within the period specified by him, deposit with him, in cash or in any other form as the Purchaser may determine, security deposit not exceeding ten percent of the value of the Contract as the Purchaser shall specify. If the Contractor is called upon by the Purchaser to deposit, ‘Security’ and the Contractor fails to provide the security within the period specified, such failure shall constitute a breach of the Contract, and the Purchaser shall be entitled to make other arrangements for the
re-purchase of the stores Contracted at the risk of the Contractor in terms of Sub-Clause (ii) and (iii) of clause 10(b) hereof and/or to recover from the Contractor, damages arising from such cancellation.

4. GUARANTEE & REPLACEMENT:

(a) The Contractor shall guarantee that the stores supplied shall comply fully with the specifications laid down, for material, workmanship and performance.

(b) For a period of twelve months after the acceptance of the stores, if any defects are discovered therein or any defects found to have developed under proper use, arising from faulty stores design or workmanship, the Contractor shall remedy such defects at his own cost provided he is called upon to do so within a period of 14 months from the date of acceptance thereof by the purchaser who shall state in writing in what respect the stores or any part thereof are faulty.

(c) If, in the opinion of the purchaser, it becomes necessary to replace or renew any defective stores such replacement or renewal shall be made by the Contractor free of all costs to the purchaser, provided the notice informing the Contractor of the defect is given by the purchaser in this regard within the said period of 14 months from the date of acceptance thereof.

(d) Should the Contractor fail to rectify the defects, the purchaser shall have the right to reject or repair or replace at the cost of the Contractor the whole or any portion of the defective stores.

(e) The decision of the purchaser notwithstanding any prior approval or acceptance thereof on behalf of the purchaser, as to whether or not the stores supplied by the Contractor are defective or any defect has developed within the said period of 12 months or as to whether the nature of the defects requires renewal or replacement, shall be final, conclusive and binding on the Contractor.

(f) PERFORMANCE BANK GUARANTEE: To fulfil guarantee conditions outlined in clause 4 (a) to (e) above, the Contractor shall, at the option of the purchaser, furnish a Bank Guarantee (as prescribed by the purchaser) from a Bank approved by the purchaser for an amount
equivalent to 10% of the value of the Contract along with first shipment documents. On the performance and completion of the Contract in all respects, the Bank Guarantee will be returned to the Contractor without any interest.

(g) All the replacement stores shall also be guaranteed for a period of 12 months from the date of arrival of the stores at purchaser’s site.

(h) Even while the 12 months guarantee applies to all stores, in case where a greater period is called for by our specifications then such a specification shall apply in such cases the period of 14 months referred to in para 4 (b) & (c) shall be the ‘asked for’ guarantee period plus two months.

5. PACKING FORWARDING & INSURANCE:

The Contractor will be held responsible for the stores being sufficiently and properly packed for transport by rail, road, sea or air to withstand transit hazards and ensure safe arrival at the destination. The packing and marking of packages shall be done by and at the expense of the Contractor. The purchaser will not pay separately for transit insurance, all risks in transit being exclusively of the Contractor and the Purchaser shall pay only for such stores as are actually received in good condition in accordance with the Contract.

6. DESPATCH:

The Contractor is responsible for obtaining a clear receipt from the Transport Authorities specifying the goods despatched. The consignment should be despatched with clear Railway Receipt/Lorry Receipt. If sent in any other mode, it shall be at the risk of the Contractor. Purchaser will take no responsibility for short deliveries or wrong supply of goods when the same are booked on ‘said to contain’ basis. Purchaser shall pay for only such stores as are actually received by them in accordance with the Contract.

7. TEST CERTIFICATE:
Wherever required, test certificates should be sent along with the despatch documents.

8. ACCEPTANCE OF STORES:

(a) The stores shall be tendered by the Contractor for inspection at such places as may be specified by the purchaser at the Contractor's own risk, expense and cost.

(b) It is expressly agreed that the acceptance of the stores Contracted for, is subject to final approval by the purchaser, whose decision shall be final.

(c) If, in the opinion of the purchaser, all or any of the stores do not meet the performance or quality requirements specified in the Purchase Order, they may be either rejected or accepted at a price to be fixed by the purchaser and his decision as to rejection and the prices to be fixed shall be final and binding on the Contractor.

(d) If the whole or any part of the stores supplied are rejected in accordance with Clause No. 8 (c) above, the purchaser shall be at liberty, with or without notice to the Contractor, to purchase in the open market at the expense of the Contractor stores meeting the necessary performance and quality Contracted for in place of those rejected, provided that either the purchase, or the agreement to purchase, from another supplier is made within six months from the date of rejection of the stores as aforesaid.

9. REJECTED STORES:

Rejected stores will remain at destination at the Contractor's risk and responsibility. If instructions for their disposal are not received from the Contractor within a period of 14 days from the date of receipt of the advice of rejection, the purchaser or his representative has, at his discretion, the right to scrap or sell or consign the rejected stores to Contractor's address at the Contractor's entire risk and expense, freight being payable by the Contractor at actuals.

10. DELIVERY:
(a) The time for and the date of delivery of the stores stipulated in the Purchase Order shall be deemed to be the essence of the Contract and delivery must be completed on or before the specified dates.

(b) Should the Contractor fail to deliver the stores or any consignment thereof within the period prescribed for such delivery, the purchaser shall be entitled at his option either:

(i) to recover from the Contractor as agreed liquidated damages and not by way of penalty, a sum of 0.5% per week of the price of any stores which the Contractor has failed to deliver as aforesaid or during which the delivery of such stores may be in arrears subject to a minimum of 10%, or

(ii) to purchase from elsewhere, without notice to the Contractor on the account and at the risk of the Contractor, the stores not delivered or others of a similar description (where others exactly complying with the particulars, are not, in the opinion of the purchaser, readily procurable, such opinion being final) without cancelling the Contract in respect of the consignment(s) not yet due for delivery, or

(iii) to cancel the Contract or a portion thereof and if so desired to purchase or authorise the purchase of stores not so delivered or others of a similar description (where others exactly if complying with the particulars are not, in the opinion of the purchaser, readily procurable, such opinion final) at the risk and cost of the Contractor.

In the event of action being taken under sub-clause (ii) & (iii) of clause 10(b) above, the Contractor shall be liable for any loss which the purchaser may sustain on that account, provided that the re-purchase or if there is an agreement to re-purchase then such agreement is made within six months from the date of such failure. But the Contractor shall not be entitled to any gain on such re-purchase made against default. The manner and method of such re-purchase shall be at the discretion of the purchaser, whose decision shall be final. It shall not be necessary for the purchaser to serve a notice of such re-purchase on the defaulting Contractor. This right shall be without prejudice to the right of the purchaser to recover damages for breach of Contract by the Contractor.
11. EXTENSION OF TIME:

As soon as it is apparent that the Contract dates cannot be adhered to, an application shall be sent by the Contractor to the purchaser. If failure, on the part of the Contractor, to deliver the stores in proper time shall have arisen from any cause which the purchaser may admit as reasonable ground for an extension of the time (and his decision shall be final) he may allow such additional time as he considers it to be justified by circumstances, of the case without prejudice to the purchaser’s right to recover liquidated damages under clause 10 thereof.

12. ERECTION OF PLANT & MACHINERY:

Wherever erection of a plant or machinery is the responsibility of the Contractor as per the terms of the Contract and in case the Contractor fails to carry out the erection as and when called upon to do so within the period specified by the purchaser, the purchaser shall have the right to get the erection done through any source of his choice. In such an event, the Contractor shall be liable to bear any additional expenditure that the purchaser is liable to incur towards erection. The Contractor shall, however, not be entitled to any gain due to such an action by the purchaser.

13. PAYMENT:

a. Contractor’s bill will be passed for payment only after the stores have been received, inspected and accepted by the Purchaser.

b. In case of AMC/CAMC the payment will be made on pro-rata quarterly basis after satisfactory completion of service for the respective quarter against submission of bills duly certified by Engineer in-charge, ISTRAC and endorsed by their Division Head.

14. MODE OF PAYMENT:
Normally payment will be made for the accepted stores within 30 days from the date of receipt of the materials.

15. RECOVERY OF SUM DUE:

Whenever any claim for the payment of, whether liquidated or not, money arising out of or under this Contract against the Contractor, the purchaser shall be entitled to recover such sum by appropriating in part or whole, the security deposited by the Contractor, if a security is taken against the Contract. In the event of the security being insufficient or if no security has been taken from the Contractor, then the balance or the total sum recoverable as the case may be, shall be deducted from any sum then due or which at any time thereafter may become due to the Contractor under this or any other Contract with the purchaser. Should this sum be not sufficient to cover the full amount recoverable, the Contractor shall pay to the purchaser on demand the remaining balance due. Similarly, if the purchaser has or makes any claim, whether liquidated or not, against the Contractor under any other Contract with the purchaser, the payment of all moneys payable under the Contract to the Contractor including the security deposit shall be withheld till such claims of the purchaser are finally adjudicated upon and paid by the Contractor.

16. INDEMNITY:

The Contractor shall warrant and be deemed to have warranted that all stores supplied against this Contract are free and clean of infringement of any Patent, Copyright or Trademark, and shall at all times indemnify the purchaser against all claims which may be made in respect of the stores for infringement of any right protected by Patent Registration of design or Trademark and shall take all risk of accidents or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for sufficiency of all means used by him for the fulfilment of the contract.

17. ARBITRATION:

In the event of any question, dispute or difference arising under these conditions or any conditions contained in the Purchase Order or in connection with this Contract (except as to any matter the decision of which is specially provided for by these conditions), the same shall be referred to the sole arbitration of the Head of the Purchase office or some other person appointed.
by him. It will be no objection that the arbitrator is a Government servant, that he had to deal with matter to which the Contract relates or that in the course of his duties as Government servant he has expressed views on all or any other matters in dispute or difference. The award of the arbitrator shall be final and binding on the parties of this Contract.

If the arbitrator be the Head of the Centre/Unit –

(i) In the event of his being transferred or vacating his office by resignation or otherwise, it shall be lawful for his successor-in-office either to proceed with reference himself, or to appoint another person as arbitrator, or

(ii) In the event of his being unwilling or unable to act for any reason, it shall be lawful for the Head of the Centre/Unit to appoint another person as arbitrator.

If the arbitrator be a person appointed by the Head of the Purchase Office – In the event of his dying, neglecting or refusing to act or resigning or being unable to act, for any reason, it shall be lawful for the Head of the Centre/Unit either to proceed with the reference himself or appoint another person as arbitrator in place of the outgoing arbitrator.

Subject as aforesaid the Arbitration & Conciliation Act 1996 and the rules thereunder and any statutory modifications thereof for the time being in force shall be deemed to apply to the arbitration proceedings under this Clause. The Arbitrator shall have the power to extend with the consent of the purchaser and the Contractor the time for making and publishing the award. The venue of arbitration shall be the place as purchaser in his absolute discretion may determine. Work under the Contract shall, if reasonably possible, continue during arbitration proceedings.

In the event of any dispute or difference relating to the interpretation and application for the provisions of the Contracts, such dispute or difference shall be referred by either party to Arbitration of one of the Arbitrations in the Department of Public Enterprises. The Arbitration Act 1996 shall not be applicable to arbitration under this clause. The award of the Arbitrator shall be binding upon the parties to the dispute provided however any party aggrieved by such award may make a further reference for setting aside or revision of the award to the Law
Secretary, Department of Legal Affairs, Ministry of Law & Justice, Govt. of India. The parties to the dispute will share equally, the cost of arbitration as intimated by Arbitrator.

18. COUNTER TERMS AND CONDITION OF SUPPLIERS:

Where counter terms and conditions printed or cyclostyled conditions have been offered by the supplier, the same shall not be deemed to have been accepted by the Purchaser, unless specific written acceptance thereof is obtained.

19. SECURITY FOR PURCHASE OF MATERIALS:

Successful tenderer will have to furnish in the form of a bank guarantee or any other form as called for by the purchaser towards adequate security for the materials and properties provided by the Purchaser for the due execution of the Contract.


The successful Tenderers shall furnish Bank Guarantee (BG) towards the cost of Free Issue Materials issued by Purchaser towards adequate Security for the FIM for the execution of the Contract. The BG is to be kept valid till supply and acceptance of the final product.

21. Earnest Money Deposit/Bid Security:

a. The Tender should be accompanied with an Earnest Money Deposit for a prescribed amount wherever called for in the Notice Inviting Tender [NIT]. Foreign vendors, registered vendors or vendors who have already applied for renewal of registration, Central PSUs/ PSEs/ Autonomous Bodies, Micro and Small Enterprises, KVIC, National Small Industries Corporation, etc., are exempted from the payment of EMD.

b. In case, the vendors are falling under the category of MSME, registered under NSIC and would like to avail exemptions, their quotations should be accompanied with necessary registration certificate with
declaration to consider their offer. Quotation received without such declaration and valid registration certificate will not be considered for exemptions under Public Procurement Policy.

22. Risk Purchase:

In case Contractor fails to deliver and install the Stores/Equipment or any part thereof, within the period fixed for such delivery and installation or at any time repudiates the Contract before expiry of such period, the purchaser is entitled to terminate or cancel the Contract and to repurchase the stores not delivered at the risk and cost of the contractor and the contractor shall be liable for any loss which the Purchaser may sustain on that account limited to the contract value.

23. Parallel Contract:

ISTRAC reserves the right to enter into Parallel Contract/s with one or more Contractors.

INSTRUCTIONS TO TENDERERS AND TERMS AND CONDITIONS OF TENDERS FOR IMPORTED STORES ITEMS:

1. ISRO Telemetry Tracking and Command Network [ISTRAC] has implemented e-tender system for ONLINE tenders. ISTRAC invites offers through e-tender portal https://e-procure.isro.gov.in for the supply of items. The suppliers need to get enrolled in the e-tender portal to access tender and submit their offer online. Vendors need to have Digital Signature Certificate as detailed on our e-portal and corporate e-mail ID to register on the above portal. Only online tenders will be accepted. No Manual/Postal/courier/e-mail/Fax offers will be entertained. No Manual tender document will be issued by ISTRAC. Suppliers are requested to note and comply with the Instructions to tenderers for online submission of tenders through E-Procurement System indicated in the document "Instructions-for-Online-Submission-of-tenders-EGPS.pdf".

2. Suppliers are requested to submit their offer/quotation online complete in all respects with technical specifications, including pamphlets and catalogues.

3. In case of two-part tenders, parties shall submit their offers as follows:-
a) Part-I – Technical Bid:

Only Technical details shall be mentioned in this bid and shall not upload any details of price along with the technical bid. Vendor specified terms column is to be filled with out indicating any price details. If any Price detail is mentioned in the Technical Bid such offer shall be rejected.

b) Part-II – Price Bid:

Only the price details along with applicable taxes and other cost if any shall be indicated in the price bid form.

4. The offer shall contain the following information as applicable. A Proforma Invoice may also be attached containing the following information:

a) The FOB/FCA value, the C & F value for import by Sea freight / Air freight up to and for air parcel post up to .........................................................should be separately indicated.

b) Agency Commission: The amount of commission included in the price and payable to the Indian Agent of the Contractor shall be paid directly to the Indian Agent by the Purchaser in equivalent Indian Rupees on the basis of an invoice from him applying T.T. buying rate of exchange ruling on the date of placement of the Purchase Order and which shall not be subject to any further exchange variations. This payment will be released to the Indian Agent immediately after Customs clearance of the goods in India.

c) The Contractor shall invoice only for the net amount payable to him, after deducting the amount of Agency Commission included in the invoice which will be paid to the Indian Agent directly by the Purchaser. However, the Contractor’s invoice should separately reflect the amount of commission payable to his Indian Agent.

d) The earliest delivery period and country of origin of the Stores.
e) Banker's name, address, telephone/fax Nos. & e-Mail ID of the Contractor.

f) The approximate net and gross weight and dimensions of packages /cases.

g) Recommended spares for satisfactory operation for a minimum period of one year.

h) Details of any technical service, if required for erection, assembly, commissioning and demonstration.

5. The FOB/FCA and C & F prices quoted should be inclusive of all taxes, levies, duties arising in the tenderer's country.

6. The offer should be valid for a minimum period of 120 days from the due date of opening of the tender.

7. Samples, if called for, should be sent free of all charges.

8. Offers made by Indian Agents on behalf of their Principals, should be supported by the proforma invoice of their Principals.

9. The details of Import License will be furnished in the purchase order.

10. The authority of person signing the tender, if called for, shall be produced.

11. Instructions / Operation Manual containing all assembly details including wiring diagrams should be attached through online mode only. All documents / correspondence should be in English language only.
12. The Purchaser reserves the right to accept or reject the lowest or any offer in whole or part without assigning any reason.

13. It is expressly agreed that the acceptance of the Stores Contracted for is subject to final approval in writing by the Purchaser.

14. a) Part shipment is not allowed unless specifically agreed to by us.

b) As far as possible stores should be despatched by Indian Flag Vessels /Air India through any Agency nominated by us.

15. Inspection / Test Certificate should be provided for the goods after testing it thoroughly at the Contractor’s works. If any Inspection by Lloyds or any other testing agency is considered necessary, it shall be arranged by Contractors.

16. Where erection or assembly or commissioning is a part of the Contract, it should be done immediately on notification. The Contractor shall be responsible for any loss/damage sustained due to delay in fulfilling this responsibility.

17. For items having shelf life, those with maximum shelf life should be supplied if order is placed.

18. The goods / material offered should be strictly as per our specifications. Change(s) in specifications, if any, should be clearly indicated by the supplier in his quotation. The supplier should also indicate make/type No. of the materials / equipments offered.

19. Indian Agents while quoting on behalf of their principals shall attach necessary authorization letter from their Principals along with the bid.
20. In a tender, either the Indian Agent on behalf of the Principal/OEM or Principal/ OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.

21. If an Indian agent submits bid on behalf of the Principal/OEM, the same Indian agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.

22. If a firm quotes `Nil' charges/consideration, the bid shall be treated as unresponsive and will not be considered;

23. The drawings, specifications, end-use, etc., given by ISTRAC along with the tender enquiry, are confidential and shall not be disclosed to any third party.

TERMS AND CONDITIONS OF THE TENDER:

1. DEFINITIONS:

(a) The term 'Purchaser' shall mean the President of India or his successors or assignees.

(b) The term 'Contractor' shall mean, the person, firm or company with whom or with which the order for the supply of stores is placed and shall be deemed to include the Contractor's Successors, representatives, heirs, executors and administrators unless excluded by the Contract.

(c) The term 'Purchase Order' shall mean the communication signed on behalf of the Purchaser by an officer duly authorised intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the Tender or offer of the Contractor for supply of stores of plant, machinery or equipment of part thereof.

(d) The term 'Stores' shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order.
2. PRICES:

Tenders offering firm prices will be preferred. Where a price variation clause is insisted upon by a tenderer, quotations with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variations.

3. TERMS OF PAYMENT:

3.1 Being a Department of the Government of India, the normal terms of payment are by Sight Draft. However, other terms of payment like establishment of Letter of Credit may be considered by the Purchaser on such terms and conditions as may be agreed upon.

3.2 The Sight Draft / Letter of Credit will be operative on presentation of the undermentioned documents:

a) Original Bill of Lading / Airway Bill

b) Commercially certified invoices describing the stores delivered, quantity, unit rate and their total value, in triplicate. The invoice should indicate the discounts, if any, and Agency Commission separately.

c) Packing List showing individual dimensions and weight of packages.


e) Test Certificate.

f) Declaration by the Seller that the contents in each case are not less than those entered in the invoices and the quality of the Stores are guaranteed as per the specifications asked for by the Purchaser.

g) Warrantee and guarantee Certificate/s vide Clause 20 hereinbelow

4. IMPORT LICENCE:
Reference to Import License No. & date and Contract number & date shall be prominently indicated in all the documents vide para 3.2

5. DEMURRAGE:

Supplier shall bear demurrage charges, if any, incurred by the purchaser due to delayed presentation of shipping documents as prescribed in para 3.2 to the bankers within a reasonable time (say within 10-12 days) from the date of bill of lading for sea consignments and within 3-4 days from the date of Air WayBill for air consignments.

6. ADDRESS OF INDIAN AGENTS:


7. GUARANTEED TIME DELIVERY:

The time for and the date of delivery stipulated in the Purchase Order shall be deemed to be the essence of the Contract. Delivery must be completed within the date specified therein.

8. INSPECTION AND ACCEPTANCE TEST:

8.1 The Purchaser's representatives shall also be entitled at all reasonable times during manufacture to inspect, examine and test on the Contractor's premises the material and workmanship of all stores to be supplied under this Contract and if part of the said stores is being manufactured on other premises, the Contractor shall obtain for the purchaser's representative permission to inspect, examine and test as if the equipment were being manufactured on the Contractor's premises. Such inspection, examination and testing shall not release the Contractor from the obligations under this Contract.
8.2 Fortress the premises of the Contractor or of his sub-contractors, the Contractor shall provide free of cost assistance, labour, material, electricity, fuel and instruments as may be required or as may reasonably be needed by the purchaser’s representative to carry out the tests efficiently.

8.3 When the stores have passed the specified test, the purchaser’s representative shall furnish a certificate to the effect in writing to the Contractor. The Contractor shall provide copies of the test/s certificates to the purchaser as may be required.

9. MODE OF DESPATCH:

Generally, stores should be despatched through Indian Flagged Vessel / AirIndia or through any other Agency nominated by the purchaser. A copy of the invoice and packing list should invariably be kept inside each of the packages.

10. PORT OF ENTRY:

Thiruvananthapuram/Chennai/Mumbai/Hyderabad/Bangalore/.........................

11. CONSIGNEE:

Purchase & Stores Officer (Stores)
Plot No. 12 & 13, III Main, II Phase,
Peenya industrial Area,
Bangalore-560058

12. SHIPPING MARKS.
The mark on the shipping documents such as invoice, bill of lading and on the packages should be as follow:

PURCHASE ORDER NO. ..........................

DATED ..........................

GOVERNMENT OF INDIA

DEPARTMENT OF SPACE

ISTRAC/ISRO

Plot No. 12 & 13, III Main, II Phase,

Peenya industrial Area

Bangalore-560058

Destination: ............................. &

Port of Entry: ..............................

13. INSURANCE OF THE STORES:

The necessity or otherwise of insurance will be as indicated in the Purchase Order.

14. CONTRACTOR'S DEFAULT LIABILITY:

14.1 The purchaser may upon written notice of default to the Contractor terminate the Contract in whole or in part in circumstances detailed hereunder:

a) If in the judgement of the Purchaser the Contractor fails to make delivery of Stores within the time specified in the Contract/agreement or within the period for which extension has been granted by the Purchaser to the Contractor.
b) If in the judgment of the Purchaser the Contractor fails to comply with any of the other provisions of this Contract.

15. In the event the Purchaser terminates the Contract in whole or in part as provided in Clause 14 the Purchaser reserves the right to Purchase, upon such terms and in such a manner as he may deem appropriate, stores similar to that terminated and the Contractor shall be liable to the Purchaser for any additional costs for such similar stores and/or for liquidated damages for delay as defined in Clause 19 until such reasonable time as may be required for the final supply of stores.

15.1 If this Contract is terminated as provided in Clause 14 the Purchaser in addition to any other rights provided in this Article, may require the Contractor to transfer title and deliver to the Purchaser under any of the following clauses in the manner and as directed by the Purchaser:

a) Any completed stores.

b) Such partially completed stores, drawing, information and Contract rights (hereinafter called manufacturing material) as the Contractor has specifically produced or acquired for the performance of the Contract as terminated. The Purchaser shall pay to the Contractor the Contract price for completed stores delivered to and accepted, by the purchaser and for manufacturing material delivered and accepted.

15.2 In the event the Purchaser does not terminate the Contract as provided in Clause 14, the Contractor shall continue the performance of the Contract in which case he shall be liable to the purchaser for liquidated damages for delays set out in Clause 19 until the stores are accepted.

16. REPLACEMENT:

If the stores or any portion thereof is damaged or lost during transit, the Purchaser shall give notice to the Contractor setting forth particulars of such stores damaged or lost during transit. The replacement of such stores shall be effected by the Contractor within a reasonable time to avoid unnecessary delay in the intended usage of the Stores. In case the purchaser agrees,
the price towards replacement items shall be paid by the purchaser on the basis of original price quoted in the tender or as reasonably worked out from the tender.

17. REJECTION:

In the event that any of the stores supplied by the Contractor is found defective in material or workmanship or otherwise not in conformity with the requirements of the Contract specifications, the purchaser shall either reject the stores or request the Contractor, in writing, to rectify the same. The Contractor, on receipt of such notification, shall either rectify or replace the defective stores free of cost to the purchaser. If the Contractor fails to do so, the purchaser may at his option either –

a) replace or rectify such defective stores and recover the extra cost so involved from the Contractor, or

b) terminate the Contract for default as provided under clause 14 above, or

c) acquire the defective stores at a reduced price considered equitable under the circumstances. The provision of this article shall not prejudice the Purchaser's rights under clause 19.

18. EXTENSION OF TIME:

If the completion of supply of stores is delayed due to reason of force majeure such as acts of god, acts of public enemy, acts of Government, fires, floods, epidemics, quarantinerestriction, strikes, freightembargoes, etc., the Contractor shall give notice within 15 days to the purchaser in writing of his claim for an extension of time. The purchaser on receipt of such notice after verification, if necessary, may agree to extend the Contract delivery date as may be reasonable but without prejudice to other terms and conditions of the Contract.

19. DELAY IN COMPLETION / LIQUIDATED DAMAGES:
If the Contractor fails to deliver the stores within the time specified in the Contract or any extension thereof, the purchaser shall recover from the Contractor as liquidated damages a sum of one-half of one percent (0.5 percent) of the Contract price of the undelivered stores for each calendar week of delay. The total liquidated damages shall not exceed ten percent (10 percent) of the Contract price of the unit or units so delayed. Stores will be deemed to have been delivered only when all their component parts are also delivered. If certain components are not delivered on time, the stores will be considered as delayed until such time as the missing parts are delivered.

20. GUARANTEE & REPLACEMENT:

a) The Contractor shall guarantee that the stores supplied shall comply fully with the specifications laid down for material, workmanship and performance.

b) For a period of twelve months after the acceptance of the stores, if any defects are discovered therein or any defects therein are found to have developed under proper use arising from faulty materials, design or workmanship, the Contractor shall remedy such defects at his own cost provided he is called upon to do so within a period of 14 months from the date of acceptance thereof by the Purchaser who shall state in writing in what respect the stores or any parts thereof are faulty.

c) If in the opinion of the purchaser it becomes necessary to replace or renew any defective stores, such replacements or renewals shall be made by the Contractor free of all costs to the purchaser provided the notice informing the Contractor of the defect is given by the purchaser in this regard within the said period of 14 months from the date of acceptance thereof.

d) Should the Contractor fail to rectify the defects, the purchaser shall have the right to reject or repair or replace at the cost of the Contractor the whole or any portion of the defective stores.

e) The decision of the Purchaser, notwithstanding any prior approval or acceptance or inspection thereof on behalf of the purchaser, as to whether or not the stores supplied by the Contractor are defective or any defects have developed within the said period of 12 months or as to whether the
nature of the defects requires renewal or replacement shall be final, conclusive and binding on the Contractor.

f) PERFORMANCE BANK GUARANTEE:

To fulfill guarantee conditions outlined in Clause 20 (a) to (e) above, the Contractor shall, at the option of the purchaser, furnish a Bank Guarantee (as prescribed by the purchaser - Bank Guarantee format enclosed) from a Bank approved by the purchaser for an amount equivalent to 10% of the value of the Contract along with first shipment documents. On the performance and completion of the Contract in all respects, the Bank Guarantee will be returned to the Contractor without any interest.

g) All the replacement stores shall also be guaranteed for a period of 12 months from the date of arrival of stores at purchaser's site.

h) Even while the 12 months guarantee applies to all stores, in case where a greater period is called for by our specifications, then such a specification shall apply, and in such cases, the period of 14 months referred to in Clause 20 (b) and (c) shall be asked for guarantee period plus two months.

21 REQUIREMENT OF ADDITIONAL NUMBERS OF THE STORES/SPARE PARTS ORDERED:

The Contractor shall also undertake the supply of additional number of items covered by the order as considered necessary by the purchaser at a later date, the actual price to be paid shall be mutually agreed to after negotiations.

22 PACKING:

a) The Contractor wherever applicable shall pack and crate all stores for sea / air shipment as applicable in a manner suitable for export to a tropical humid climate, in accordance with internationally accepted export practices and in such a manner so as to protect it from damage.
and deterioration in transit by road, rail or sea for space qualified stores. The Contractors shall be held responsible for all damages due to improper packing.

b) The Contractor shall ensure that each box / unit of shipment is legible and properly marked for correct identification. The failure to comply with this requirement shall make the Contractor liable for additional expenses involved.

c) The Contractor shall notify the purchaser of the date of shipment from the port of embarkation as well as the expected date of arrival of such shipment at the designated port of arrival.

d) The Contractor shall give complete shipment information concerning the weight, size, content of each packages, etc.

e) Transshipment of equipment shall not be permitted except with the written permission of the purchaser.

f) Apart from the despatch documents negotiated through Bank, the following documents shall also be airmailed to the purchaser within 7 days from the date of shipment by sea and within 3 days in case of air-consignments:

a) Commercial Bill of Lading / Air Way Bill / Post parcel Receipt. (Two non-negotiable copies)

b) Invoice (3 copies)

c) Packing List (3 copies)

d) Test Certificate (3 copies)

e) Certificate of Origin.

The Contractor shall also ensure that one copy of the packing list is enclosed in each case.

23. ARBITRATION:
If at any time any question, dispute or difference whatsoever shall arise between the purchaser and the Contractor upon or in connection with this Contract, either party may forthwith give to the other notice in writing of the existence of such question, dispute or difference and the same shall be referred to the adjudication of two arbitrators, one to be nominated by purchaser, other by a Contractor and in the event of any difference of opinion, the arbitrators will refer the matter to the umpire. The arbitration shall be conducted in accordance with the rules and procedure for arbitration of the International Chamber of Commerce at Paris. The expenses of the arbitrators and umpire shall be paid as may be determined by them. However, the venue of such arbitration should be in India.

24. LANGUAGE AND MEASURES:

All documents pertaining to the Contract including specification, schedule, notice, correspondence, operating and maintenance instructions, drawings or any other writings shall be written in English language. The metric system of measurement shall be used exclusively in the Contract.

25. INDEMNITY:

The Contractor shall warrant and be deemed to have warranted that all stores supplied against this Contract are free and clean of infringement of any patent, copyright or trade mark and shall at all times indemnify the purchaser against all claims which may be made in respect of stores for infringement of any right protected by Patent, Registration of design or Trade Mark, and shall take all risk of accident or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for the sufficiency of all the means used by him for the fulfillment of the Contract.

26. COUNTER TERMS AND CONDITIONS OF SUPPLIERS:

Where counter terms and conditions/printed or cyclostyled conditions have been offered by the supplier, the same shall not be deemed to have been accepted by the purchaser unless specific written acceptance thereof is obtained.
27. SECURITY INTEREST:

On each item to be delivered under this Contract, including an item of work in progress in respect of which payments have been made in accordance with the terms of the Contract, purchaser shall have a security interest in such items which shall be deemed to be released only at the time when the applicable deliverable item is finally accepted and delivered to the purchaser in accordance with the terms of the Contract. Such security interest of the purchaser shall constitute a prior charge as against any other charge or interest created in respect of such items by any entity.

28. BANK CHARGES:

While the purchaser shall bear the bank charge payable to his Bankers (State Bank of India), the Contractor shall bear the Bank charges payable to his Bankers including the cheques towards advising amendment commissions.

29. TRAINING:

The Contractor shall, if required by the purchaser, provide facilities for the practical training of Purchaser's engineering / technical personnel from India and for their active association on the manufacturing processes throughout the manufacturing period of the Contract / stores, number of such personnel to be mutually agreed upon.

30. APPLICABLE LAW:

The Contract shall be interpreted, construed and governed by the laws of India.

The successful Tenderers shall furnish Bank Guarantee (BG) towards the cost of Free Issue Materials issued by Purchaser towards adequate Security for the FIM for the execution of the Contract. The BG is to be kept valid till supply and acceptance of the final product.

32. Customs Duty:

ISTRAC is eligible for concessional Customs duty @ 5.15% vide Notification No.51/96-Cus dated 23.07.1996 as amended vide Customs Notification No. 24/2007 dated 01.03.2007. The necessary Customs Duty Exemption Certification [CDEC] shall be provided by ISTRAC for Imported Items. Tenderers are requested to take note of this aspect while submitting the offer wherever applicable.

33. High Sea Sale:

Tenderers submitting offer[s] against High Sea Sale Trade, the price of such offers be in Indian Rupees only and shall be inclusive of Freight and Clearance Charges for delivery up to ISTRAC, Bengaluru. The offers shall be Firm, Fixed Price without any variation in Exchange Conversion Rate whatsoever. No Sales Tax will be applicable for High Sea Sale. Customs Duty Exemption Certificate 51/96 will be provided by ISTRAC. Customs Duty at actuals will be reimbursed against documentary evidence such as Bill of Entry.

34. Earnest Money Deposit/Bid Security:

a. The Tender should be accompanied with an Earnest Money Deposit for a prescribed amount wherever called for in the Notice Inviting Tender [NIT]. Foreign vendors, registered vendors or vendors who have already applied for renewal of registration, Central PSUs/ PSEs/ Autonomous Bodies, Micro and Small Enterprises, KVIC, National Small Industries Corporation, etc., are exempted from the payment of EMD.

b. In case, the vendors are falling under the category of MSME, registered under NSIC and would like to avail exemptions, their quotations should be accompanied with necessary registration certificate with declaration to consider their offer. Quotation received without such declaration and valid registration certificate will not be considered for exemptions under Public Procurement Policy.
35. Risk Purchase:

In case Contractor fails to deliver and install the Stores/Equipment or any part thereof, within the period fixed for such delivery and installation or at any time repudiates the Contract before expiry of such period, the purchaser is entitled to terminate or cancel the Contract and to repurchase the stores not delivered at the risk and cost of the contractor and the contractor shall be liable for any loss which the Purchaser may sustain on that account limited to the contract value.

36. Parallel Contract:

ISTRAC reserves the right to enter into Parallel Contract/s with one or more Contractors.

INSTRUCTIONS TO TENDERERS FOR ONLINE SUBMISSION OF TENDERS THROUGH E-PROCUREMENT SYSTEM:

GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
ISRO TELEMETRY TRACKING AND COMMAND NETWORK (ISTRAC)
Plot No. 12 & 13, 3rd Main, 2nd Phase
PEENYA INDUSTRIAL AREA, BANGALORE – 560 058
Phone No.: 080-28376383 Fax: 080-28094061  E-mail: purchase@istrac.org

1. Conditions for online submission of tenders:

1.1. It is mandatory for interested parties to register as vendors in our e-procurement portal https://eprocure.isro.gov.in for participating in online eProcurement process of ISRO. Only registered vendors can submit their offers online in our eProcurement portal.
1.2. To register as vendors please refer to the help demos listed on the home page of the e-procurement link mentioned above. They may approach help desk (contact details provided on the home page) for any technical help for registration and subsequent process.

1.3. Bidders shall arrange themselves all resources, including Digital signature certificates and Internet Connections at their own cost, for participating in online tendering.

1.4. Vendors can download the tender details and submit their offers online using their vendor accounts (obtained during registration) in our portal. Help demos for tender download and bidding processes are given on home page. 1.5. The tender should be submitted online in the ISTRAC link before the due date and time as specified in the tender schedule in the portal.

1.6. Vendors shall also take note of other Instructions to tenderers indicated in the tender documents.

2. Procedure for seeking clarifications/help for the tender:

2.1. All enquiries regarding the tenders and submission of offers shall be online and only through our eProcurement portal.

2.2. Vendors may approach help desk e-mail id and phone number given on the home page for any technical help (e-mail: support.isro@nextenders.com and Ph:020-30187500).

3. Procedure for reporting technical issues, if any, in online submission:

3.1. In case bidder encounters any technical snag pertaining to e-procurement system while acting on the tender, computer screen shot of the error message with date & time stamp on the web-browser along with the query shall be e-mailed by the bidder to the help desk (as mentioned above) for problem resolution at least 24 hours before the due date and time of the tender.

3.2. The time taken to ascertain, evaluate and suggest a solution for the problem reported by vendor may vary from case to case. Hence vendors are advised to submit the bid well in advance before closing date and time to avoid last minute issues.

3.3. ISTRAC shall not be responsible for failure of vendors in submitting bids online caused due to technical reasons at vendor end such as network or power failures, computer failure, internet-browser, mistakes / errors in filling the bids on line by vendor etc.

3.4. Queries by vendors on technical problems on the last day of tender will not be binding on ISTRAC/ISRO for resolving/addressing. ISTRAC will not be responsible for non-submission of bids for those cases.
4. Terms & conditions for extension of Tender Due Date:

4.1. The Server Date & Time as appearing on our website https://eprocure.isro.gov.in shall only be considered for the cut-off date and time for receipt of tenders.

4.2. Request, if any, for extension of tender due date shall reach ISTRAC at least 4 working days in advance of due date and time for consideration. ISTRAC is not bound by such requests to extend the due date unless it feels necessary.

4.3. The e-procurement system does not permit submission of any offer after closing date and time of the e-tender. Hence, there is no scope for any late or delayed offer in the on-line bidding process. Requests for extension of due date and time citing technical issues in online submission of offers will not be entertained.

4.4. In case there is complete breakdown of eProcurement system on the last day of the tender for any reason then ISTRAC may extend the date for submission after their own assessment.

5. Reworking on Submitted bids:

5.1. Vendors have to note that once rework is initiated the status of the earlier submitted bid becomes Pending till the bidding process is completed once again. During the process of rework earlier submitted bid data becomes invalid and will not be available for opening. If rework is initiated then vendor has to complete the entire process of bid submission once again within the due date and time for a valid bid submission.

5.2. ISTRAC will not be responsible for non submission of bids resulting due to failure of vendor to once again complete the process of bid submission before due date after reworking of submitted bid is initiated.

5.3. Please note that unsolicited clarifications / changes / modifications sought by the vendors after submitting their bids will not be considered.

6. Procedure for filling offers online:

6.1. Vendors may please note that in case of two-part tender, the price details shall be mentioned only in the price-bid template. If the price details either in part or full are indicated in the technical bid, the bid will be disqualified.

6.2. Vendors may note that in e-procurement system submission of bid is a two-step process. After submission of their bids, vendors have to wait for bid sealing by ISTRAC purchase officer. Following that vendors have to submit open authorization in the e-procurement system to enable the purchase officer
to open the bid. If open authorization is not completed by the vendor then purchase officer will not be able to open the bid and the bid becomes invalid.

7. Using Digital Certificates for online submission:

7.1. Vendors may note that digital keys of class-III USB tokens, which supports both digital signing and encryption are to be used for bidding in ISTRAC e-procurement system.

7.2. Vendors may note that they have to use the same digital key with which they submitted the bid to give open authorization. If vendors use different key for open authorization, the system will not accept the open authorization and the bid becomes invalid.

7.3. In case the digital key which is used during bid submission expires before giving open authorization, then vendor has to first login with the new key and use the expired key for completing open authorization process for the bid.

8. Uploading files in to E-procurement portal:

8.1. Vendors may please note that the maximum file size that can be uploaded per attachment in e-procurement system is 4 MB. If the document is more than 4 MB then the document is to be split into multiple documents of size less than 4 MB and upload into attachments. Literature / Technical data should accompany the quotation.

8.2. Similarly, if the number of files to be uploaded is more than the number of attachments allowed in the tender then group the files into folders such that the number of folders is less than the number of attachments. Further zip/archive the folders and upload as attachments. However, the attachment size should still be less than 4 MB.

8.3. Vendors may note that documents including Literature / Technical data are to be uploaded through e-procurement system only.
Bid Templates

CAMC Compliance Chapter-4

Item Specifications

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Specifications</th>
<th>Compliance (Yes /No)</th>
<th>Offered Specifications</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Klystron /SSPA based Doppler Weather Radar system including all units/sub units and accessories as listed in Chapter-3</td>
<td></td>
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<tr>
<td>2</td>
<td>7 years (Year-wise) comprehensive Annual Maintenance Contract (CAMC) (for all radar sites and central servers) after the expiry of 3 years warranty period</td>
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<tr>
<td>3</td>
<td>C-Band dual polarized Klystron /SSPA based Doppler Weather Radar system including all</td>
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<td></td>
<td></td>
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<tr>
<td>Year</td>
<td>Description</td>
<td></td>
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<tr>
<td>1st Year CAMC</td>
<td>C-Band dual polarized Klystron /SSPA based Doppler Weather Radar system including all units/sub units and accessories (1 Set)</td>
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<td></td>
<td></td>
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<tr>
<td>2nd Year CAMC</td>
<td>C-Band dual polarized Klystron /SSPA based Doppler Weather Radar system including all units/sub units and accessories (1 Set)</td>
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<tr>
<td>3rd Year CAMC</td>
<td>C-Band dual polarized Klystron /SSPA based Doppler Weather Radar system including all units/sub units and accessories (1 Set)</td>
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<tr>
<td>4th Year CAMC</td>
<td>C-Band dual polarized Klystron /SSPA based Doppler Weather Radar system including all units/sub units and accessories (1 Set)</td>
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<tr>
<td>Tender No: ISTRAC/PURC/2020E0203801</td>
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<tr>
<td><strong>system including all units/sub units and accessories (1 Set) 5th Year CAMC</strong></td>
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<td><strong>8</strong> C-Band dual polarized Klystron /SSPA based Doppler Weather Radar system including all units/sub units and accessories (1 Set) 6th Year CAMC</td>
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<tr>
<td><strong>9</strong> C-Band dual polarized Klystron /SSPA based Doppler Weather Radar system including all units/sub units and accessories (1 Set) 7th Year CAMC</td>
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<td><strong>10</strong> No extra cost will be paid for initial three years warranty.</td>
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<td><strong>11</strong> 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</td>
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</table>

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.

**Compliance Table Chapter 5**

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Specifications</th>
<th>Compliance (Yes /No)</th>
<th>Offered Specifications</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Compliance with necessary documentation</td>
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<tr>
<td>1</td>
<td>to be provided for all Technical specifications and general conditions of the contract.</td>
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<tr>
<td>2</td>
<td>System design, simulations/analysis and subsystem specifications report to be provided to meet the technical specifications.</td>
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<tr>
<td>3</td>
<td>The design, development, installation, testing and commissioning of the system will be reviewed by an expert committee at all stages and any suggestion by the committee should be incorporated. Whether this condition acceptable to you?</td>
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<tr>
<td>4</td>
<td>Any deviation in the design, material, and configuration will be subjected to the review and approval of the ISTRAC expert committee. Whether this condition</td>
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<td><strong>5</strong></td>
<td>Technical documents of capital and minor equipments (in English) should be supplied by the Party to ISTRAC. These documents should be self-explanatory and should be prepared after discussions with ISTRAC. Whether this condition acceptable to you?</td>
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<td><strong>6</strong></td>
<td>At any point of time, if ISTRAC requires the Party to do any additional work related to the project work beyond what is mentioned in the scope of work, the Party should undertake the work on existing terms and conditions and additional remuneration, as mutually agreed upon. Whether this condition is acceptable to you?</td>
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<tr>
<td><strong>7</strong></td>
<td>Design and development of the sub systems of the proposed DWR System</td>
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</table>
should meet all the scientific and operational requirements stated. Extensive simulations should be carried out before finalizing the detailed design. The results should be submitted to ISTRAC and presented before the ISTRAC review committee. Any modifications suggested by the ISTRAC expert committee should also be carried out and presented. Whether this condition is acceptable to you?

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<tr>
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<th>Parties submitting the Tender or those short listed may be called for a meeting at ISTRAC before opening commercial bid, if required.</th>
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<td>8</td>
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<td>9</td>
<td>The Party should provide 3 years of Warranty. This should include all defects in materials, equipment,</td>
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<tr>
<td>10</td>
<td>Availability of all the components/subsystems should be ensured by the party for at least 10 years after the commissioning and acceptance by ISTRAC/IGCAR. Is this condition acceptable to you?</td>
</tr>
<tr>
<td>11</td>
<td>Price bid justification documents, based on the sub system level bill of material value that lead to the final pricing of the bid.</td>
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<tr>
<td>Sl. No</td>
<td>Specifications</td>
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<tr>
<td>1</td>
<td>CHAPTER-3, Technical Specification of C-BAND DUAL POLARIZED DOPPLER WEATHER RADAR SYSTEM SPECIFICATIONS is provided below along with defined serial number. Vendor should comply for</td>
</tr>
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</table>

Technical Compliance Table Chapter 6

Item Specifications -II
<p>| | |</p>
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<tr>
<td><strong>2</strong></td>
<td><strong>1. GENERAL REQUIREMENT</strong>&lt;br&gt;The specifications described herein refer to C-Band (5450-5650 MHz) Dual Polarized Doppler Weather Radar, hereafter referred to as <em>The System</em>. The System shall be capable of detecting and estimating meteorological parameters of severe weather phenomena that cause widespread damage to life and property. The DWR systems to have following latest state of the art facilities for smooth operation of complete Radar system and its accessories: a) NTP clock based on GPS for system clock time synchronisation of the Radar and the connected</td>
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</table>
computers in the Radar network.
b) Communication hardware and accessories for data transfer to central location.
c) The system will have dual polarization capability by simultaneous and independent transmission and receive in both linear Horizontal and Vertical polarizations.
d) The system shall have user selectable Single polarization and Dual polarization mode of operation.
e) Latest state of art computer system shall be used for the generation of data and its processing.
f) The entire operation of the System shall be fully computer controlled and remotely manageable.
g) The system shall have the provision for complete automation of the calibrations routines to verify system parameters and receiver
h) Provision for quick calibration checks to ensure system sensitivity.

i) The tentative location for installation of the systems is IGCAR, DAE, Kalpakkam campus.

j) 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 its processing, with OEM Licensed Version of Red Hat Linux / Windows Operating System.

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

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

m) Facility for Radar data analysis and
products generation at the site inclusive of automatic dissemination of warnings and alerts are to be provided by the firm.

n) Display of data such as all Radar base products, and other products as mentioned in the document, to be overlaid on GIS map.

o) Web browser based access to GIS based Radar data display to be provided using web browsers such as Microsoft Internet Explorer, Firefox, Chrome etc.

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

q) The contractor 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 KLYSTRON.
or SSPA (three IF channel processing) based transmitter. 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.

r) Lightning protection and Avionic Lamp is to be in place ensuring safety of the system and mounted elements by the way of grounding cable through ground bar or other best suited mechanism.

s) ISTRAC/IGCA R will take possession after appropriate test and evaluation meeting the specifications and accept the Radar system after commissioning.

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.
u) Transportation from the factory to the site will be the responsibility of the Contractor.
v) The entire work of installation and commissioning of the Radar has to be carried out by the contractor, though ISTRAC/IGCAR may station few of its officials at the site for guidance.
w) The network link between the systems will be provided by ISTRAC/IGCAR; contractor shall suggest suitable bandwidth for real time system control and monitoring; a near real-time receipt of data for generating composites of
OVERALL SYSTEM REQUIREMENTS: General

2.1. Range of observation: 450 Km (Reflectivity)  250 Km (Velocity, Spectrum Width)

2.2. Range resolution: 75 m or better

2.3. Unambiguous Velocity Minimum: 30 m/s or better at 250 Km

2.4. Detection capability /System sensitivity: 13 dBZ or better at 230 km range

2.5. VSWR: 1.3:1 or better

2.6. Scan Time: 10 elevation volume scan -2 to 30deg with all base moments acquired in 8 minutes or better consistent with accuracy stated in section 2.4

2.6.2.7. Transmit & Receive RMS Phase Noise: less than or equal to 0.2deg or better. RMS
| 5 | Transmitter: 2.8:  
Transmitter Type: Tunable High Power Klystron or high power SSPA 2.9.  
Frequency Range: 5.45 GHz to 5.65 GHz.  
Transmitted power: Required to meet 13 dBZ at 230 Km as per Point No. 2.4. 2.11.  
Pulse repetition frequency: To meet Range and Velocity requirement as per Points No. 2.1, 2.3 & 2.4. 2.12.  
Pulse width: 0.5 to 4.5 Sec (for Klystron based transmitter) or NLFM based pulse width required to match the range of observation and detection with Range sidelobe less than 35dB in the case of SSPA based |
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<tbody>
<tr>
<td>2.13. Transmitter Polarization: Horizontal, Vertical, STSR (Simultaneous Transmit &amp; Simultaneous Receive) 2.14. Modulator: Solid state (if transmitter is klystron based) 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.</td>
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</tr>
</tbody>
</table>
lobe: Better than 28 dB down from the main lobe to 12 degree and beyond 12 degree better than 30 dB.  

2.19. Beam width: 1 Deg. or better  

2.20. Azimuth steering: 0 to 360 Degrees continuous. ± 0.05 deg. steps in designate mode (pointing mode).  

2.21. Vertical Steering: -2 Deg. to +92 Deg. or better. ± 0.05 Degree steps in designate mode (pointing mode).  

2.22. Polarization: Horizontal, Vertical, STSR (Simultaneous Transmit and Simultaneous Receive)  

2.23. Pointing accuracy: 0.1 Deg. or better  

2.24. Pointing resolution: 0.01 Deg. or better  

2.25. Cross Polar Radiation: better than 36dB  

2.26. Azimuth velocity: operation mode: from 3 Deg./sec
<table>
<thead>
<tr>
<th>Tender No: ISTRAC/PURC/2020E0203801</th>
<th>58</th>
</tr>
</thead>
<tbody>
<tr>
<td>(0.5 rpm) to 36 Deg./sec (6 rpm) in both Clock-wise (CW) and Counter Clock-wise (CCW) directions. Calibration mode: from 0.6 Deg/sec (0.1 rpm) to 36 Deg./sec (6 rpm) in both Clock-wise (CW) and Counter Clock-wise (CCW) directions. 2.27. Elevation velocity: operation mode: from 3 Deg/sec (0.5 rpm) to 18 Deg/sec (3 rpm) in both up and down directions. Calibration mode: from 0.6 Deg/sec (0.1 rpm) to 18 Deg/sec (3 rpm) in both up and down directions. 2.28. Acceleration in AZ &amp; EL axes: Minimum 10 Deg/Sec.SQ during scan operation, Should meet scan time specified in 2.6. 2.29. Angular data resolution in AZ &amp; EL axes: 0.0Deg. or better using 21 bits or better absolute angle Encoder 2.30. Power</td>
<td></td>
</tr>
</tbody>
</table>
| Handling: To meet the specification 2.10.2.31. 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. 2.32. Safety switch: Should be provided on antenna pedestal and at servo amplifier assembly. The switch shall disable mechanical movement of the antenna and RF radiation. 2.33. 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 and 0.5 to 3.0 RPM in Elevation. 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 and 0.1 to 3.0 RPM in Elevation Diagnostic Mode: Provision to diagnose important functionality. 2.34. Scan strategy: Different scan strategies in a scheduler. Automatic change over between different scan strategies shall be possible. 2.35. 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.b) Transmission Loss: better than 0.2 dB one way.2.36. Wind load: Up to 240 km/hr. 2.37. Lightening Protection: Lightening rod with dual ground wires. Avionic Lamp attached to the lightening arrester. Suitable to the site selected. 2.38. Obstruction / Avionic lights: Twin Light (LED) System with solar powered & auto switch ON/OFF. 2.39. Antenna & Radome Templates and Anchor bolts: Antenna & Radome foundation templates and Anchor bolts to be supplied by the Contractor well in advance to facilitate the construction.
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<td>7</td>
<td><strong>Receiver:</strong> 2.40. <strong>Type:</strong> Multichannel Digital receiver for Dual Polarization (H&amp;V)- STSR mode operation or suitable for SSPA based Transmission and reception. Provision to sample Transmitter pulse for matched filtering. 2.41. Noise figure: 3 dB or better 2.42. Linear dynamic range: 95 dB or better 2.43. Minimum Discernable Signal: -108 dBm or better @2MHz Bandwidth</td>
</tr>
<tr>
<td>8</td>
<td><strong>Radar Signal Processor:</strong> 2.44. Doppler processing: Pulse Pair and FFT/DFT (selectable) 2.45. Clutter suppression: a) Clutter Elimination for &gt; 40 dB. b) The system shall have provision for identifying and filtering non-meteorological</td>
</tr>
</tbody>
</table>
Radar Signal Processor: 2.46.

Parameters to be measured and displayed:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td>a) Reflectivity (ZH &amp; Zv)</td>
<td></td>
<td>Max: 65 dBZ or better</td>
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<tr>
<td></td>
<td></td>
<td>Resolution: 0.01 dB</td>
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<td></td>
<td></td>
<td>Accuracy: ≤1 dB @ SNR &gt; 10dB</td>
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<td></td>
<td></td>
<td>r = 230 Km; r &lt; 900 mb</td>
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<tr>
<td>b) Radial velocity (VH)</td>
<td>m/s</td>
<td>Max: ≤30 m/s</td>
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<tr>
<td></td>
<td></td>
<td>Resolution: 0.1 m/s</td>
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<tr>
<td></td>
<td></td>
<td>Accuracy: ≤1 m/s @ SNR &gt; 10dB</td>
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<tr>
<td></td>
<td></td>
<td>r = 230 Km; r &lt; 300 mb</td>
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<tr>
<td>c) Spectrum Width (ΩH)</td>
<td></td>
<td>Max:</td>
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<tr>
<td>Parameter</td>
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<tr>
<td>10m/s Resolution</td>
<td>0.1 m/s</td>
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<tr>
<td>Accuracy:</td>
<td>±2m/s @ SNR &gt; 10dB; r=230Km;</td>
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<tr>
<td></td>
<td>r&lt;300 m d) Differential reflectivity (ZDR)</td>
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<tr>
<td>Dynamic range</td>
<td>-5 to 8 dBZ</td>
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<tr>
<td>Resolution:</td>
<td>0.01 dB</td>
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<tr>
<td>Accuracy:</td>
<td>±0.2dB @ SNR&gt;10dB ; r=230Km;</td>
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<td>r&lt;900m e) Differential phase (µDP)</td>
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<tr>
<td>Dynamic range</td>
<td>-180 to 180 deg</td>
<td></td>
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<tr>
<td>Resolution:</td>
<td>0.1 deg</td>
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<tr>
<td>Accuracy:</td>
<td>±2deg @ SNR&gt;10dB; r = 230Km;</td>
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<tr>
<td></td>
<td>r&lt;900m f) Correlation Coefficient at zero lag (HNV)</td>
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<tr>
<td>Dynamic range</td>
<td>0 to 1</td>
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<tr>
<td>Resolution:</td>
<td>0.005</td>
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<tr>
<td>Accuracy:</td>
<td>±0.05 @ SNR&gt;10dB; r= 230Km;</td>
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<td></td>
<td>r&lt;900m g) System design parameters should satisfy all accuracy requirements and will be tested with simulated signal at coupler port.</td>
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</table>

2.47. Calibration: a) Standalone
Radar Simulator with Dual Channel RF output from IQ Data Playback shall be provided for Radar Bandwidth and accuracy supporting the technical specifications.

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.

2.48. Sun and 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) Automatic software driven mode for sphere calibration
f) The system shall be made to point towards a metal sphere for establishing the Radar Constant of the system.
g) Procedure shall be provided and to be demonstrated during FAT & SAT.
h) Script based execution of such measurements and saving of results are expected as a part of such provision.

2.49. Base Parameters to be measured:
Real time Processing: FPGA based or equivalent Base Product generation (required FPGA Board and Workstations shall be provided) Parallel Signal processing Computing Capability: 10Gbps Broadcasting of I&Q data (each 32bit resolution) for
multi node signal
ProcessingData
Outputs(All Base Products): 16bit, 8bit
|--------------------------|-----------------|-----------------|---------------------|----------------|----------------------|---------------------|

2.50. Radar Controller:

- **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 at the time of delivery in terms of mother board chipset, Processor, processor speed, RAM size and speed, Ethernet speed/USB speed, VGA/DVI card memory and hard disk storage with 32” (inches) Full HD resolution, color LED monitor. Both Workstations shall be used for operation, control of
the Radar; Work station shall have Raid 1 configuration of storage to avoid any loss of data.c) Radar controller shall display system Health Check parameters including status, interlocks & important analog parameters of all the subsystems. d) Radar controller shall have provision to record and replay the data for all above mentioned status, interlocks and analog parameters.e) Provision for web based remote Radar control, monitoring and operations.f) Super user and user level configurations shall be provided for Radar Controller and the details will be given during implementation stage.

| 14 | 2.51. Display, Archival, Product Generation and Peripheralsa)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 at the time of delivery in terms of mother board chipset, Processor, processor speed, RAM size and speed, Ethernet speed/USB speed, VGA/DVI card memory and hard disk storage with 32” (inches) Full HD resolution, color 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 the time of delivery in terms of mother board chipset, Processor, processor speed, RAM size and speed, Ethernet speed/USB speed, VGA/DVI/HDMI card memory and hard disk storage processor with 32” (inches) full HD resolution, color LED monitor. Workstations shall be used for Offline product generation and networking/communication purpose.

c) NTP Server for Network Time Synchronisation: Symmetricom Sync Server S250 or better.

d) NAS storage with RAID-6 dual parity, Dual Controller, Total cache 48GB, 4 x 10GbE Ethernet Ports, support NFS v3, CIFS or higher, with capacity 20TB.
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<td>Tender No: ISTRAC/PURC/2020E0203801</td>
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<td>(NLSAS). e) Provision for recording and playback of IQ offline data as well as storage of I&amp;Q data in external media. Minimum 1 hour data archival with full bandwidth. f) Color LaserJet (600dpi minimum) to get Hard copy output. g) Provision for web 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 license shall be multiuser and open, without any restriction/hardware lock/soft-lock.</td>
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<td>15</td>
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<td>Power Requirements: 2.52. Power: Capable of operating, 230V ±10% V, 50 ±5% Hz in Single phase. 415V ±10% V, 50</td>
</tr>
</tbody>
</table>
Technical Specification Chapter 6 General

Item Specifications - III

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Specifications</th>
<th>Compliance (Yes /No)</th>
<th>Offered Specifications</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Features: 2.53. General: 1. System should be designed for continuous operation on a 24 x 365 basis with standard preventive maintenance schedules. 2. The Radar system shall be mounted on top of building around 23m height.</td>
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<td>2</td>
<td>3. Radome should be Tuned A sandwiched or equivalent, suitable for operating coastal region. Suitable base ring shall be supplied to fix the Radome on the Radome concrete base. Foundation template and anchor bolts are part</td>
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of the supply. Foundation template and anchor bolts shall be provided well in advance to facilitate the construction of Radome concrete base. All the bolts and fasteners used shall be of stainless steel (AISI304 or better).

4. 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.

5. The required number of electrical earthing lines for various peripherals inclusive of Radar, has to be indicated by the Contractor. Two earthing lines around 20hm for systems reaching to instrumentation room and one earth line around 10 ohm reaching to the Lightening arrester will be provided by IGCAR/ISTRAC. However
extending copper strips form earthing line to Instrumentation room is the scope of the vendor. If any further requirement shall be made by the contractor as per the system requirement.

6. The antenna should have provision for being lifted to a desired height to the top of the building.

7. 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. 8. Suitable base ring shall be supplied to fix the Antenna mount on the Antenna concrete base. Foundation template and anchor bolts are part of the supply. Foundation template and anchor bolts
shall be provided well in advance to facilitate the construction of Antenna concrete base. All the bolts and fasteners used shall be of stainless steel (AISI304 or better).

9. Suitable movable working platform & a Ladder, based on stainless steel or better, may be provided in the Antenna Area to access Azimuth and Elevation housing, RF Front-end Electronics and Waveguide plumbing in the Antenna area. The required Height and Size shall be discussed during PDR.

10. Suitable Camera to be positioned inside the Radome to view the antenna movement remotely. The display shall be incorporated in the local GUI of the Antenna Control Unit and any other PC.
11. The antenna pedestal should be rust-free and corrosion resistant.
12. Standard practices of Sand blasting, Zinc primer, Galvanising and Painting are to be followed for pedestal units.
13. Bearings with long life and low wobble are to be used.
14. Support to route servo and electrical cables for simultaneous rotation of AZ & EL.
15. All fixers and fasteners should be of Stainless Steel.
16. State-of-art antenna Controller unit (Antenna Servo controller) shall be supplied with Ethernet interface for interfacing with other subsystems of the radar. Antenna Servo Controller subsystem should be configured and controlled by Radar Controller for selected scan strategy through Ethernet.
17. Fail-safe brakes, Motor and antenna Velocity feedback data provision, Manual Stow-lock facility for both AZ and EL, Mechanical stopper, Up pre-limit and final limit switches, Down pre-limit and final limit switches, Facility of Manual Brake release in AZ and EL, for maintenance to be provided.  
18. Antenna Over-speed, Over Current, Emergency Stop switches at Pedestal and Console to be provided.  
19. RF performance of the antenna should be tested at Test Range and results to be provided. RF, environmental and structural performance of Radome test results shall be provided.  
20. 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 party taking care over all link budget and performance of the system which is essence of the contract. Suitable air conditioning system also shall be provided as and where required to operate all subsystems as per the specification beyond the existing environmental controls available at the building.

| 6 | 21. Following test capabilities shall be incorporated in the system software. All logged data for servo (10 msec or better) should be user friendly (text file or excel formats) for analysis. a) Step response test: The position loop and rate loop step response test to evaluate the responsiveness and |
stability of the antenna servo system. Rise time, settling time, % of overshoot and bandwidth shall be computed, logged and displayed. 

b) Velocity & acceleration: The velocity and acceleration test is designed to measure the maximum velocity and acceleration of the antenna servo system. Velocity and acceleration measurements can be made in position/rate loops.

c) Scan recording: To record in real time & to plot in offline (atleast 5 variables in same plot), the commanded angle, antenna angle, velocity, acceleration, lag error & motor currents.

d) Unbalance test: The antenna is moved in UP & DOWN direction w.r.t elevation axis according to the user selected range and the motor currents &
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<th>antenna angles are monitored and logged. This data is analysed for any unbalance in elevation axis (counter weight balance).</th>
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<tr>
<td>22</td>
<td>EMI/EMC aspects must be followed in the design.</td>
</tr>
<tr>
<td>23</td>
<td>Suitable design should be adopted to isolate low power and high power units to avoid interference and Servo Motor noise.</td>
</tr>
<tr>
<td>24</td>
<td>Proper shielding of the cables, intra rack and inter rack, should be followed to avoid interference and spurious pickups.</td>
</tr>
<tr>
<td>25</td>
<td>All outdoor modules inside radome shall comply IP-65 STANDARD.</td>
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<tr>
<td>26</td>
<td>All the components used shall be of industrial grade.</td>
</tr>
<tr>
<td>27</td>
<td>All RF connectors shall from M/s Huber Schunner/Radiall (France) / Times make or equivalent. Other</td>
</tr>
</tbody>
</table>
Connectors, control / power, shall be MS circular connectors from M/s Amphenol / Allied make or equivalent.

28. Gain and Phase matching of H & V receivers to meet the accuracy of the base products specified. 29. Adequate derating (minimum 60%) shall be provided to all the selected components. Derating analysis and reliability report shall be submitted. 30. All the sub-systems and components used in the system should be of high quality and reliability to support long-term operation of the system at coastal humid environment. They should have long operational life and should be from highly reliable and reputed manufacturers with proven track-record.
Make, model numbers and detailed technical specifications of all the sub-systems and components should be provided.

31. Entire Radar system to be configured for operation in different modes through a Radar Controller with provision for Remote operation, Data archiving and data transmission through standard communication interfaces.

32. The Radar system should be having required menu driven software with GUI controls for:
   a) Operating the Radar.
   b) Setup of operational parameters. Special mode of operation for H/V followed by STSR for the same scan.
   c) Configuration of weather products.
   d) The process of setup of various scan parameters should be
easily accessible to operators using GUI.
e) Generation of alerts and warning.
f) Setup of communication channels.
g) Setup of display overlayed on map of India with political boundaries of international borders, states and district boundaries.
h) Automatic calibration for antenna parameters, dynamic range, etc.
i) Provision to incorporate the Bias Values for correction.
j) Monitoring the health of the Radar using BITE as well as logging of subsystem level information at fixed intervals while Radar in operation.
k) Interlock, status and analog parameters from sub systems shall be available in Radar controller GUI display for monitoring and should be included in the Radar operation for the
system and subsystem safety. l) The system should be capable of detecting failures of subsystems and should provide indication locally and remotely.m) System should have the feature of blanking RF radiation for selective sector.

33. Real Time display of base products for the selected scan. 34. Base Product display with zooming options, lat-long display, selectable parameter display and color coded. 35. Simultaneous display of data having more than one parameter, Maximum of four parameters. 36. Base product display with terrain map – GIS. 37. Provision for recording and playback of base data. 38. Requisite software protection for denying unauthorized access to be
<p>| | |</p>
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</thead>
<tbody>
<tr>
<td>11</td>
<td>39. System should be operated remote monitoring and control including equipment power supply. 40. 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. 41. Base product generation in Near Real time as per configuration. 42. Base data product images to be archived in different image formats like GIF, JPEG, PNG. 43. 3-D display of NRT Base products. 44. Contractor shall provide Communication hardware for data transfer to central location.</td>
</tr>
<tr>
<td>12</td>
<td>45. The network link between the systems will</td>
</tr>
</tbody>
</table>
be provided by ISTRAC/IGCAR; Contractor 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. 46. Detailed thermal analysis to be carried out for all subsystems and all subsystems should be designed with efficient thermal management like proper conductive plates & heat sink etc., 47. The contractor shall do necessary modifications in the design based on PDR committee suggestions & recommendations, if any, without extra cost. 48. 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
49. Transportation from the factory to the site will be the responsibility of the developer/manufacturer.

50. The entire site preparedness and custom tuning/positioning is to be fully borne by the developer/manufacturer and the work is to be undertaken by the developer/manufacturer in the presence of ISTRAC/IGCAR engineers.

51. The entire work of installation and commissioning of the Radar has to be carried out by the developer/manufacturer, though ISTRAC/IGCAR may station few of its officials at the site for guidance.

52. ISTRAC/IGCAR 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 Contractor.53. Endurance test of complete integrated system for 15 days, with full load.54. Operation, Reference, maintenance and troubleshooting manuals for both hardware (Transmitter, Receiver, Control and Data Acquisition Systems etc.) and software and all peripherals should be made available.55. Adequate test points should be provided in the system for the health monitoring and speedy trouble shooting. These aspects should be explicitly stated in the maintenance/trouble shooting manual.56. All the sub systems should have ISRO logo.57. Any
### Additional Requirement

Additional requirement, other than listed in above paragraphs, for fixing, installation and integration of the system is in the vendor's scope of work.

### 2.54. Software

The system should have proven software for base data processing and display.

### 2.55. Environmental Parameters

- **Wind Load:** 240 Kmph
- **Antenna and Radome:** Ambient Temperature: 10º c to 55º cb. Ambient Relative Humidity: up to 95%, non-condensing
- **Transmitter, Receiver, Computer system and Servo unit:** Temperature: 23ºC ±5º Cb.
Relative Humidity: up to 55%, non-condensing

<table>
<thead>
<tr>
<th>Vendor Specificed Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
</tr>
<tr>
<td>Taxes and other costs, if any</td>
</tr>
<tr>
<td>Warranty</td>
</tr>
<tr>
<td>Delivery Terms</td>
</tr>
<tr>
<td>Delivery Period</td>
</tr>
<tr>
<td>Payment Terms (Equipment)</td>
</tr>
<tr>
<td>Payment Terms (CAMC)</td>
</tr>
<tr>
<td>Validity</td>
</tr>
<tr>
<td>Security Deposit: FD or BG for 10% of PO value submitted after receipt</td>
</tr>
</tbody>
</table>
of PO and valid till supply & acceptance.

Performance Bank Guarantee: BG for 10% of PO value submitted while claiming payment valid till end of warranty period with a claim period of 60 days.

(OR) SD-cum-Warranty(PBG) (in lieu of SD & PBG as a single instrument): BG for 10% of PO value submitted after receipt of PO valid till end of Warranty Period with a claim period of 60 days.

Delay in Completion/Liquidated Damages: A sum of 0.5% undelivered portion of PO for each week of delay or part thereof. Total LD shall not exceed 10% of PO Value.

Any other terms

**Supporting Documents from Vendor**

**Attachment - I:**

**Attachment - II:**

**Price Bid Form**

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Slab Range</th>
<th>Qty</th>
<th>UOM</th>
<th>Currency</th>
<th>Unit Price</th>
<th>Total Price</th>
</tr>
</thead>
</table>

Tender No: ISTRAC/PURC/2020E0203801
<table>
<thead>
<tr>
<th>Tender No: ISTRAC/PURC/2020E0203801</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DOPPLER WEATHER RADAR</strong> Design, Development, Installation and Commissioning of C-Band Dual Polarimetric Doppler Weather Radar (Exclusive of CAMC)</td>
</tr>
<tr>
<td><strong>CAMC FOR RADARS : 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</strong></td>
</tr>
<tr>
<td><strong>CAMC FOR RADARS : 7 years (Year - wise) comprehensive</strong></td>
</tr>
<tr>
<td><strong>Annual Maintenance Contract (CAMC)</strong> (for all radar sites and central servers) after the expiry of 3 years warranty period - 2nd Year CAMC</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>CAMC FOR RADARS : 7 years (Year - wise) comprehensive Annual Maintenance Contract (CAMC) (for all radar sites and central servers) after the expiry of 3 years warranty period - 3rd Year CAMC</td>
</tr>
<tr>
<td>CAMC FOR RADARS : 7 years (Year - wise) comprehensive Annual Maintenance</td>
</tr>
</tbody>
</table>
| Contract (CAMC)  
(for all radar sites and central servers) after the expiry of 3 years warranty period - 4th Year CAMC | - | 1 | No | - | - | - |
| CAMC FOR RADARS :7 years (Year - wise) comprehensive Annual Maintenance Contract (CAMC)  
(for all radar sites and central servers) after the expiry of 3 years warranty period - 5th Year CAMC | - | 1 | No | - | - | - |
Break-up of other taxes and other costs should be specified in respective narration columns.

Sum of these Break-up values should be specified in respective value columns.