

**INDIAN INSTITUTE OF TROPICAL METEOROLOGY
PASHAN, PUNE-411008**

CORRIGENDUM

Tender No.: IITM/CAIPEX/001/2009

The date of submission of tender for Hiring of Instrumented Aircrafts – Qty 02 Nos. along with C-Band Doppler / C-Band Doppler Polarimetric Radar – Qty 01 No. for CAIPEEX Phase-II Experiment published vide Global Tender Notice No. IITM/CAIPEX/001/2009 is hereby extended up to 13:30 hrs on 11 January 2010 and shall be opened on same day at 1500 hrs. Those who have earlier quoted for this equipment need not submit again. Other terms & conditions shall remain unchanged. Please visit our website for details. www.tropmet.res.in

Senior Technical Officer-II
For Director
Email: nirgude@tropmet.res.in

INDIAN INSTITUTE OF TROPICAL METEOROLOGY (IITM)

(An Autonomous Research Institute under the Ministry of Earth Sciences (MoES), Govt. of India)

Dr. HOMI BHABHA ROAD, PASHAN, PUNE-411 008, INDIA

TENDER NOTICE

Advt. No.IITM/CAIPEX/001/2009

Sealed Tenders are invited (under TWO BID SYSTEM, i.e., separate Technical Bid and Commercial Bid) from reputed Indian/foreign manufacturers/ authorized distributors/ authorized dealers OR their authorized Indian Agents for the “supply, commissioning and demonstration” of Stores mentioned below: -

Tender Reference No	Brief Description of Stores	EMD (Either in Rs. or US\$)		Cost of tender fee (Either in Rs. or US\$)	
		In Rs.	In US\$	In Rs.	In US\$
IITM/CAIPEX/001 /2009	Aircraft fitted with instruments - 1 No. Also capable of glaciogenic seeding	10.00 lacs each	20000 each	10000 each	200 each
	Aircraft for warm cloud seeding equipped with hygroscopic flares and capable of cloud base salt seeding-1 No.				
	C-Band Doppler / C Band Doppler Polarimetric Radar - 1 No.				

Last Date of Issue of Tender Document : 11 January 2010

Last Date for Receipt of Tender Bid : 11 January 2010 up to 1330 Hrs.

Date of Opening of Technical Bids of Tender : 11 January 2010 at 1500 Hrs

For details, please visit our website <http://www.tropmet.res.in>. Tender documents can be either obtained from the Sr. Technical Officer, IITM, or may be downloaded from our website. IITM will not be responsible for postal or any other delay and reserves the right to reject any or all the tenders without assigning any reasons.

Tender Document

for Competitive Bidding for the Supply, Installation and Demonstration of Following Stores/Goods/Equipment

Item No.	Tender Reference No	Brief Description of Stores/Goods/Equipment
01	IITM/CAIPEX/001/2009	Aircraft fitted with instruments for measuring Atmospheric State parameters, cloud microphysics, aerosols and trace gases- 1 No. Also capable of glaciogenic seeding
02		Aircraft for cloud seeding equipped with hygroscopic flares and capable of cloud base salt seeding -1 No.
03		Doppler/ Polarimetric C-Band Weather Radar- 1 No.

INDIAN INSTITUTE OF TROPICAL METEOROLOGY (IITM)

(An Autonomous Research Institute under the Ministry of Earth Sciences (MoES), Govt. of India)

Dr. HOMI BHABHA ROAD, PASHAN, PUNE-411 008, INDIA

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TENDER DOCUMENT

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SECTION-I: DEFINITIONS

In this document, the following terms shall be interpreted as indicated:

- i. IITM means Indian Institute of Tropical Meteorology, Pune
- ii. "The Tenderer or the Bidder" means the individual or firm submitting a tender or bid for purchase of the Goods and Services by IITM against a tender notice.
- iii. "The Purchaser(s) or Client(s)" means the organization purchasing the Goods / services (i.e., IITM)
- iv. "The Supplier" or "The Vendor" means the individual or firm supplying the Goods and Services under this Contract.
- v. "The Contract" means the agreement entered into between the Purchaser and the Supplier, as recorded in the Contract Form Signed by the parties, including all the attachments and appendices thereto and all documents incorporated by reference therein;
- vi. "The Contract Price" means the price payable to the Supplier under the Contract for the full and proper performance of its contractual obligations;
- vii. "The Goods" means all the hardware / equipment, machinery and /or other materials which the Supplier is required to supply to the Purchaser under the Contract;
- viii. "Services" means services ancillary to the supply of the Goods, such as transportation and insurance and any other incidental services, such as installation, commissioning, provision of technical assistance, training and other obligations of the Supplier covered under the Contract;
- ix. "GTC" means the General Terms and Conditions of Contract contained in this section.
- x. "STC" means the Special Terms and Conditions of Contract.
- xi. "The Client's Country" is the country named in STC.
- xii. "Day" means a working day.

SECTION-II: INVITATION FOR BIDS & INSTRUCTION TO BIDDERS (IBIB)

1. Indian Institute of Tropical Meteorology, Pune invites sealed tenders from eligible Indian/Foreign Original Equipment Manufacturers or their authorized distributors, dealers or Indian Agent for demonstration, supply, installation and commissioning of stores/goods/equipments listed in Section V of this document.
2. Interested eligible Bidders may either

Obtain the Tender Document on submission of a written application along with the tender document fee as indicated against the equipment in Indian rupees or equivalent by demand draft in favour of "Director , IITM Pune" payable at Pune, from

Sr. Technical Officer,

Indian Institute of Tropical Meteorology

Dr. HOMI BHABHA ROAD, Pune-411 008

or

download the Tender Document from our website <http://www.tropmet.res.in>. Those who are downloading the tender documents from the website have to deposit the tender document fee while tender submission. Research Institutes fully funded by Govt. are exempted from payment of tender fee.

3. A bidder may bid for any one or more of the items/stores/goods/equipments mentioned in Section V. A separate bid needs to be submitted for each item/store/goods/equipment as per norms given below.
4. Two bid system will be adopted for this tender;

In this system, tenderers must submit their offer in two separate sealed envelopes as mentioned below:

Envelope No. 1: Called "Technical Bid " shall contain (to be submitted in duplicate):

- a. Earnest Money Deposit (EMD) as given in IBIB Clause 12 or necessary exemption certificate if manufacturer is covered under SSI or equivalent exemption. In case the manufacturer is not covered under exemption certificate and the bid is tendered by his authorized agent the earnest money deposit will have to be paid irrespective of the fact that tenderer is an SSI unit.
- b. Form of Details about Tenderer (Sec VII) along with the following documents.

- i. A certified Xerox copy of Partnership deed / memorandum of articles and associations.
 - ii. Power of attorney, if required
 - iii. Certified copy of valid latest Income Tax clearance certificate, if applicable
 - iv. Details of service centers, international offices, point of presence, including registration details, if any.
 - v. List of service stations / Customer support stations in India, with detailed address and phone numbers and contact person through whom services will be provided (if required)
 - vi. Documents of previous Experience of Bidder's Eligibility, Purchase order & Completion certificate of end users.
 - vii. Detailed information regarding previous experience of supply and installation of the similar equipment/systems to any Government Organization and list of the clients
 - viii. A copy of the Agency agreement of Indian agent with the Foreign Supplier, if applicable.
 - ix. A copy of registration with DGSD for Indian agent of Foreign Supplier, if applicable.
- c. Technical Compliance for all Clauses in Technical Specifications as given in Section V.
 - d. Confirmation letter that the financial bid covers all the items of the tender document.
 - e. Guarantee Bond for Performance as given in Section VIII.
 - f. Bid Security Form as given in Section IX.
 - g. Any other related documents.

All Documents in the Technical Bid should be submitted in the above sequence with Index Page and Page numbers.

Envelope No. 2 : Called "Commercial Bid " shall contain:

- i) Duly filled prescribed Bid Form and Price Schedule (Section VI) with proper seal and signature of authorized person on each paper of tender
- ii) Item-wise unit cost as well as total cost for total requirement should be quoted in clean and neat manner in figure as well as words. Any correction is to be authenticated.

iii) Price bid should contain price details as per Section VI.

Both the technical and commercial envelopes should be sealed separately and clearly indicate **“Envelope no. 1 - Technical Bid”** and **“Envelope no. 2 - Commercial Bid”**. Both the sealed envelopes should be kept in a third larger envelope and addressed to the

Director,
Indian Institute of Tropical Meteorology,
Dr.Homi BhaBha Road,
Pune-411 008

Please write the tender reference number on each envelope and seal all the envelopes as per IBIB Clause 15.

If it is found that the Tenderer does not submit any of the above documents or if it is found that the price quoted is submitted with technical bid, the tender will be rejected.\

IMPORTANT DATES FOR SUBMISSION OF TENDER

Last Date of Issue of Tender Document	: 11 January 2010
Last Date for Receipt of Tender	: 11 January 2010 up to 1330 Hrs
Date of Opening of Technical Bids of Tender	: 11 January 2010 at 1500 Hrs

The envelope no. 1 containing Technical Bid will be opened at **1500 Hrs on 11 January 2010 at IITM** in the presence of the nominated committee of IITM, in the presence of the participant bidders or their authorized representatives. Any change in this will be duly communicated to the bidders.

5. Eligible Bidders

- 5.1 This invitation for Bids is open to Indian/Foreign Original Equipment Manufacturing companies or their authorized distributors/dealers or Indian Agents who are to supply the equipment and provide warranty on behalf of respective original equipment manufacturers and who have their sales and support office(s) in India.
- 5.2 The Indian/Foreign Original Equipment Manufacturing companies (or their authorized distributors/dealers/Indian Agents) should have been in the business of supply of the stores/goods/equipments successively for the last three years.
- 5.3 The bidder should be preferably ISO Certified.

The bidder is required to submit the documentary evidence (Purchase order & Completion Certificate) for the above along with the Technical Bid.

- 5.4 Government-owned enterprises bidding jointly with private bidders will not be entitled for benefits of Government-owned enterprise.
- 5.5 Bidders should not be under a declaration of ineligibility for corrupt and fraudulent practices issued by IITM in accordance with IBIB Clause 27.

6. Eligible Goods and Services

- 6.1 All goods and ancillary services/spares to be provided under the Contract shall have their origin in eligible source countries, and all expenditures made under the contract will be limited to such goods and services.
- 6.2 For purpose of this clause, “origin” means the place from where the goods are supplied, through manufacturing, processing or substantial or major assembling of components from or from which the ancillary services/spares are supplied. Goods are produced, when a commercially recognized product results that is substantially different in basic characteristics or in purpose or utility from its components.
- 6.3 The country of origin of goods and services is distinct from the nationality of the Bidder.

7. Cost of Bidding

- 7.1 The Bidder shall bear all the costs associated with the preparation and submission of its bid, and IITM will in no case be responsible or liable for these costs, regardless of conduct or outcome of bidding process.
- 7.2 The Bidder is expected to examine all instructions, forms, terms and specifications in the bidding documents. Failure to furnish all information required by the bidding documents or submission of a bid not substantially responsive to the bidding documents in every respect will be at the Bidder’s risk and may result in rejection of its bid.

8. Clarification of Bidding Documents

A prospective Bidder requiring any clarification of the bidding documents may notify

Director,
Indian Institute of Tropical Meteorology
Dr. HOMI BHABHA ROAD, PASHAN, PUNE-411 008, INDIA
Tel No.+91-20-25893600 / 25893675-80
Fax: +91-20-25893825
Email – venkat@tropmet.res.in

in writing at the address indicated above. IITM will respond in writing to any request for the clarification of any bidding documents which it receives 10 days prior to deadline for submission of bids.

B. PREPARATION OF BIDS

9. Language of Bid

The bid prepared by the Bidder, as well as all correspondence and documents relating to the bid exchanged by the Bidder and IITM shall be in English language. Supporting documents and printed literature furnished by the Bidder may be in another language provided they are accompanied by an appropriate translation of the relevant document in the English language and in such a case, for purpose of interpretation of the Bid, the English translation shall govern.

10. Bid Form

The Bidder shall complete the Bid Form (Section VI) and the appropriate Price Schedule furnished in the documents indicating the goods to be supplied and services to be offered, a brief description of the goods and services, their country of origin, quantity and price.

11. Documents establishing Good's Eligibility and Conformity to Bidding Documents.

- 11.1 The Bidder shall furnish, as part of its bid, documents establishing the eligibility and conformity to the bidding documents of all goods and services, which the Bidder proposes to supply under the contract.
- 11.2 The documentary evidence of the goods and services eligibility shall consist of a statement in the price schedule on the country of origin of goods and services offered with a certificate of origin shall confirm at the time of shipment.
- 11.3 The documentary evidence of conformity of goods and services to the bidding documents may be in the form of literature, drawing and data, and shall consist of:
 - a) A detailed description of the essential technical and performance characteristics of the goods;
 - b) A list giving full particulars, including available sources and current prices, of spare parts, special tools, etc., necessary for the proper and continuing functioning of the goods for the period for the three years following the commencement of the use of the goods by IITM, and
 - c) An item-by-item commentary on IITM's Technical Specification demonstrating substantial responsiveness of the goods and services to those specifications or a statement of deviations and exceptions to the provisions of the Technical Specifications.
 - d) Bidder should give details of the complete details of all the configurations of the equipment offered along with Model and Modules of the product offered.
 - e) Bidder should give Bill of material in technical bid without commercial details.

- 11.4 For purposes of the commentary, the Bidder shall note that standards for workmanship, material and equipment, and references to brand names or catalogue numbers designated by IITM in its Technical Specifications are intended to be descriptive only and not restrictive.

12. Earnest Money Deposit (EMD)

- 12.1 E.M.D or Bid Security for each item in Indian Rupees or in US\$ (in case of foreign suppliers with no Indian agent) as per the Table below should be deposited by the Tenderer, in any one of the following forms, alongwith the Technical bid:-
- 12.1.1 Pay Order or Demand Draft in favour of Director, IITM
- 12.1.2 Bank Guarantee in the prescribed format given in section IX, from a Indian Nationalised Bank in favour of Director, IITM irrevocable and operative till the expiry of ninety days after the validity of offer.
- 12.1.3 EMD in case of a Foreign Supplier should be furnished by its Indian agent in any of the forms of IBIB Clauses 12.1.1 to 12.1.2. In case the Foreign Supplier does not have an Indian agent, EMD may be paid either through Bank Guarantee issued by the foreign branches of Indian nationalized bank or Bank Draft in US\$ in favour of Director , IITM payable at Pune.
- 12.1.4 In case the vendor/supplier/contractor would like to submit EMD by Bank guarantee(BG), then the original BG shall be routed through the banker to IITM directly by registered post with acknowledgement due. In case the BG is handed over to the vendor/supplier/contractor by the bank for any genuine reasons, the BG issuing branch shall immediately send an unstamped duplicate copy of the BG directly to IITM by registered post with acknowledgement due with the covering letter to verify the BG issued by us and confirm that it is in order. The vendor/supplier/contractor shall comply this provision meticulously.
- 12.2 The EMD shall be put in a separate envelope superscribing tender reference no. as such on it and put in the envelope containing technical bid as described in IBIB Clause 4. In the absence of EMD the Bid will not be considered. Research institutes fully funded by Govt. are exempted from payment of EMD.
- 12.3 The Earnest Money Deposit will be returned along with necessary endorsement for payment to the bidder (without interest) whose offers are not acceptable to IITM within 30 days after acceptance of technical recommendations.

12.4 The EMD shall also be forfeited:

12.4.1 if a Bidder withdraws its bid or increases rates during the period of Bid validity specified by the Bidder on the Bid Form ;

12.4.2 or in case of a successful Bidder, if the Bidder fails:

- a) to accept the Purchase Order as per IBIB Clause 25 or refusal to execute the tender after it has been awarded or obligations under the same are not fulfilled; or
- b) to furnish the performance security deposit in accordance with IBIB Clause 26.

13. Period of Validity Bids

13.1 Bids shall be valid for 180 days after the date of bid opening prescribed by IITM. A Bid valid for a shorter period shall be rejected by IITM as non-responsive.

13.2 In exceptional circumstances, IITM may solicit the Bidder's consent to extend the period of validity of the Bid. The request and the responses thereto shall be made in writing. The Bid Security period, shall also be suitably extended. A Bidder may refuse the request by forfeiting its EMD. A Bidder granting the request will not be permitted to modify its bid.

13.3 Bid evaluation will be based on the bid prices without taking into consideration the above corrections.

14. Format and Signing of Bid

14.1 Both the Bids envelopes and their contents shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized to bind the Bidder to the Contract. Written power-of-attorney accompanying the Bid shall support the latter authorization. The person or persons signing the Bid shall initial all pages of the Bid, except for un-amended printed literature.

14.2 Any interlineations, corrections, erasures or overwriting shall be valid only if the person or persons signing the Bid sign them.

C. SUBMISSION OF BIDS

15. Sealing and Marking of Bids

15.1 The inner envelope shall also indicate the name and address of the Bidder to be returned unopened in case it is declared "late".

15.2 If the outer envelope is not sealed and marked as specified, IITM will assume no responsibility for the Bid's misplacement or premature opening.

15.3 Telex, cable, e-mail or facsimile bids will not be considered.

16. Deadline for Submission of Bids

16.1 **Bids must be received by IITM at its addresses mentioned above not later than 1330 Hrs on 11 January 2010.** Bids may be sent through courier/speed post or dropped in the Tender Box available in the respective Laboratories. In the event of the specified

date for the submission of Bids being declared as a holiday for IITM, the bids will be received up to the appointed time on the next working day.

- 16.2 IITM may, at its discretion, extend this deadline for submission of bids by amending the tender document, in which case all rights and obligations IITM and Bidders will thereafter be subject to the deadline as extended.

17. Late Bids

Any bid inadvertently received by IITM after the deadline for submission of bids prescribed by IITM, will not be considered and returned unopened to the Bidder.

D. BID OPENING AND EVALUATION OF BIDS

18. Opening of Bids by IITM

- 18.1 **A nominated Committee of IITM will open all Technical Bids, in the presence of Bidder or his representative, who choose to attend, at 1500 Hrs on 11 January 2010.**

18.2 The Bidder's representative who is present shall sign an attendance register evidencing their attendance. In the event of the specified date of Bid opening being declared holiday for IITM, the Bid shall be opened at the appointed time and location on the next working day.

18.3 The Bidder's names, the presence or the absence of requisite EMD and such other details as IITM, at its discretion, may consider appropriate, will be announced at the time of opening. No Bid shall be rejected at the opening, except for late bids, which shall be returned unopened to the bidders.

18.4 After the rigorous evaluation of the Technical Bid by IITM (Indian institute of tropical meteorology) the qualified tenderers will be short-listed.

18.5 No clarification at the initiative of the bidder, after the technical bids are opened shall be entertained.

18.6 The Commercial Bids will be opened from the Short listed Bidders only at a time and place to be intimated to the Short listed Bidders. The bid prices, discounts and such other details as IITM, at its discretion, may consider appropriate, will be announced at the time of opening of Commercial Bids.

19. Clarification of Bids

During evaluation of bids, IITM, at its discretion, may ask the Bidder for a clarification of its bid. The request for a clarification and the response shall be in writing and no change in prices or substance of the bid shall be sought, offered or permitted. However No post bid clarification at the initiative of the bidder; shall be entertained.

20. Preliminary Examination

- 20.1 IITM will examine the technical bids to determine whether they are complete, whether any computational errors have been made, whether sureties have been furnished, whether the documents have been properly signed, and whether the bids are generally

in order. Bids from dealers, without proper authorization from the manufacturer as per **Section IX**, shall be treated as non-responsive.

- 20.2 Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected. If the supplier does not accept the correction of errors, its bid will be rejected. If there is a discrepancy between words and figures, the amount in words will prevail.
- 20.3 IITM may waive any minor formality or non-conformity in a bid, which does not constitute a material deviation, provided such a waiver does not prejudice or affect the relative ranking of any Bidder. Prior to the detailed evaluation, IITM will determine the substantial responsiveness of each bid to the bidding documents. For purposes of this Clause, a substantially responsive bid is one, which confirms to all the terms and conditions of the bidding documents without material deviation. Deviations from or objections or reservations to critical provisions such as those concerning EMD (IBIB Clause 12), Guarantee Bond for Performance Security Deposit (IBIB Clause 4), Warranty (GTC Clause 15), Applicable law (GTC Clause 22) and Taxes and duties (STC Clause 1.4 & 1.5) will be deemed to be material deviations. IITM's determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.
- 20.4 If a Bid is not substantially responsive, it will be rejected by IITM and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

21. Evaluation and comparison of Bids

- 21.1 IITM will evaluate and compare the bids, which have been determined to be substantially responsive.
- 21.2 In IITM's evaluation of a bid price, such price evaluation shall include all costs as well as duties and taxes paid or payable on components and raw material incorporated or to be incorporated in the goods, and excise duty on the finished goods, (if Payable) and price of incidental services, the following factors, in the manner and to the extent indicated in the Technical Specifications:
 - 21.2.1 Cost of inland transportation, freight, transit insurance, and other costs within India incidental to the delivery of the goods to their final destination;
 - 21.2.2 Delivery schedule offered in the bid;
 - 21.2.3 Deviations in payment schedule from that specified in the General Terms and Conditions of Contract;
 - 21.2.4 The availability in India of spare parts and after-sales services for the equipment offered in the bid;
- 21.3 Contract period
IITM require that the goods under the Invitation for Bids shall be delivered during July 2010 and August 2010 and is extendable up to September 2010. The estimated time of

arrival of goods at the destination site should be calculated for each bid after allowing for reasonable transportation time. The supplier will have to pay a penalty to IITM in the form and at the rate mentioned in the GTC Clause No.19. No credit will be given to earlier deliveries.

21.4 Deviation in Payment Schedule.

The Special Terms and Conditions of Contract stipulate the payment schedule offered by IITM.

22 Contacting IITM

22.1 Any effort by a Bidder to influence IITM in its decision on bid evaluation, bid comparison or contract award shall result in disqualification of the Bidder's Bid and also forfeiture of his EMD amount.

23 Purchaser's Right to Accept Any Bid and to Reject Any or All Bids

Director, IITM reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of Contracts, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or Bidders of the grounds for IITM's action.

24 Notification of Awards

24.1 Prior to the expiration of the period of the bid validity, IITM will notify the successful bidder in writing, to be confirmed in writing by registered letter, that his bid has been accepted unconditionally.

24.2 The notification of award will constitute the formation of the Contract at Bidder's cost.

24.3 Upon the successful Bidder's furnishing of Performance Security Deposit pursuant to IBIB Clause 26, IITM will promptly notify each unsuccessful Bidder and will discharge its EMD or bid security; pursuant to IBIB Clause 12.

25 Signing of Contract

25.1 At the same time as IITM notifies the successful Bidder that its bid has been accepted, IITM will send the bidder the work order, incorporating all the terms and conditions.

25.2 Within 10 days of receipt of the work order /Contract, the successful bidder shall sign and date the Purchase Order/contract and return it to IITM along with Performance Security Deposit as per IBIB Clause 26.

26 Performance Security Deposit

26.1 Within 10 days of the receipt of notification of award of purchase order / contract from IITM, the Bidder shall furnish a Performance Security Deposit equivalent to 5% of the contract value in any one of the forms as given below:

- 26.1.2 Pay Order or Demand Draft in favour of Director, IITM.
- 26.1.3 Bank Guarantee from a Nationalised Bank in favour of Director, IITM - irrevocable and operative for the entire period starting from acceptance of the contract ending 60 days after completion of the warranty period.
- 26.1.4 In case the vendor/supplier/contractor would like to submit security performance security Deposit by Bank guarantee(BG), then the original BG shall be routed through the banker to IITM directly by registered post with acknowledgement due. In case the BG is handed over to the vendor/supplier/contractor by the bank for any genuine reasons, the BG issuing branch shall immediately send an unstamped duplicate copy of the BG directly to IITM by registered post with acknowledgement due with the covering letter to verify the BG issued by us and confirm that it is in order. The vendor/supplier/contractor shall comply this provision meticulously.

In case the Foreign Supplier does not have an Indian agent, Performance Security deposit may be paid either through Bank Guarantee issued by the foreign branches of Indian nationalized bank or Bank Draft in US\$ in favour of Director IITM payable at Pune.

- 26.2 The Performance Security Deposit is required towards fulfillment of the WORK order / Contract obligations. This Security Deposit will be forfeited in case the successful Bidder fails to execute the WORK order/ Contract.
- 26.3 Failure of the successful Bidder to comply with the requirement of the IBIB Clause 27 can constitute sufficient grounds for the annulment of the award in which event IITM may call for new bids.

27 Corrupt or Fraudulent Practices.

- 27.1 IITM requires that the bidders/suppliers/ contractors under this tender, observe the highest standards of ethics during the procurement and execution of such contracts. In pursuance of this policy, IITM:

27.1.1 Defines for the purposes of this provision, the terms set forth as follows:

- a) “corrupt practice” means the offering, giving, receiving or soliciting of any thing of value to influence the action of the public official in the procurement process or in contract execution; and
- b) “fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or a execution of a contract to the detriment of IITM, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial

non-competitive levels and to deprive IITM of the benefits of the free and open competition;

27.1.2 will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;

27.2 IITM will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract if it at any time determines that the firm has engaged in corrupt and fraudulent practices in competing for, or in executing, a contract.

28 Interpretation of the clauses in the Tender Document / Contract Document

In case of any ambiguity in the interpretation of any of the clauses in Tender Document or the Contract Document, the interpretation of the Director, IITM shall be final and binding on all parties.

29 In case of any legal dispute the jurisdiction will be Pune only.

SECTION III: SPECIAL TERMS AND CONDITIONS (STC)

1. FOR INDIAN SUPPLIERS:

- 1.1 IITM reserves the right to allow the public enterprises price preference facility as admissible under the existing policy.
- 1.2 IITM shall be under no obligations to accept the lowest or any other tender and shall be entitled to accept or reject any tender in part or full without assigning any reasons whatsoever.
- 1.3 In case of partnership firm or Joint Hindu concern, the names and full particulars of the partners or the members if the Joint Hindu family owning the concern, the information will have to be submitted on separate sheet along with the Tender. The Tender must be signed:-
 - (i) In the event of being a sole proprietary concern by the sole proprietor or by a constituted attorney duly authorized to enter into and sign agreements on his behalf including agreement to refute disputes arising under or relating to such agreement to arbitration by a power of attorney signed by the proprietor and authenticated by a Notary Public or Magistrate.
 - (ii) In the event of being a partnership firm, by all partners or by a constituted attorney duly authorized to enter into and sign on behalf of the partnership firm including agreements, to refute disputes arising under or relating to such agreements or arbitration by a power of attorney executed under the firm's common seal and authenticated by a Notary Public or a Magistrate.
 - (iii) In the event of being a Hindu Joint Family concern, by the Kartas of the Joint family

1.4 CENTRAL SALES TAX/ Value Added Tax (VAT):

1.4.1 Service tax, if applicable will be reimbursed at the prevailing rate.

1.5 CLERANCES AND APPROVALS

All clearance/approvals required for operating the goods in India, the responsibilities rest with the Suppliers including financial liability. However, IITM will assist in getting the clearances/approvals from respective agencies.

1.6.PAYMENT TERMS

1. Payments Terms will be governed by the Finance rules of Ministry of Earth Sciences (MoES) Government of India. No advance payment will be made.
2. Mobilization charges will be paid after acceptance of the aircraft after arrival of Instrumented Aircraft in India. The committee will inspect the aircraft to conform that the instruments stated in the tender documents are installed in the aircraft and are in working conditions.
3. The Payment would be of following pattern :

Letter of Credit for the total amount of the contract will be established with the IITM's scheduled bank in Pune with instructions mentioning the following payment terms :

• On arrival of the aircraft/radar	20 %
• After Instrumenting the aircraft/installation of radar	20 %
• Start of the program & completion of 25 hours of flying	10 %
• After completion of 50 hrs. of flying	10 %
• After completion of 50 hrs. of flying	10 %
• During demobilization	10 %
• Interim report submission	10 %
• Final Report Submission by the mission scientists	10 %

On submission of the invoice in duplicate, IITM will instruct the bank for the release of the money, as per the above schedule.

2. FOR FOREIGN SUPPLIERS

- 2.1 Cost of the items should be mentioned clearly in the Commercial Offer (Part-II) only. The optional and any other essential items / accessories required for the maintenance of the equipment should also be specified in the offer separately.
- 2.2 All costs should be given in Indian rupees and/or in a convertible currency like US-\$, UK- Pounds, Japan- Yen, France- Francs or German Mark or Euro.
- 2.3 The Principal Supplier should clearly indicate the address of its Indian Agent, if any, and percentage (%) of Agency Commission payable, if any.
- 2.4 The Indian Agent should produce a copy of the Agency Agreement with the foreign principal giving the precise relationship between them and their mutual interest in business.
- 2.5 In case of tender submitted by an Indian agent, a copy of their registration certificate with DGS&D, New Delhi under the compulsory Scheme of Ministry of Finance regarding the registration of Indian Agent of foreign supplier has to be enclosed if applicable.
- 2.6 The Bidder should indicate the names of the reputed Indian organizations, Labs and other scientific and technical institutes where the Bidder has supplied similar equipment and attach satisfactory performance report of the equipment from the user organizations.
- 2.7 Details of services rendered by the Bidder should be made clear in the Bid.
- 2.8 The Tenderer's conditions printed on the tender or otherwise sent along with the tender shall not be binding on IITM.
- 2.9 Supply means "Supply, Installation, Commissioning and satisfactory demonstration of the whole system and training". If there are any extra charges for Installation, Commissioning and training, the same should be specified in the commercial offer.
- 2.10 The address of Principal's/Manufacturer's and their Banker's details should be furnished.
- 2.11 Installation is to be arranged by the supplier free of cost, and the same is to be done within 2 weeks days of the arrival of the equipment at site.

- 2.12 The makes / brand and name and address of the manufacturer, Country of Origin, Country of Shipment and currency in which rates are quoted are to be mentioned.
- 2.13 The payment of local currency portion shall be payable in equivalent Indian Rupees, within 30 days after the receipt of the equipment in good condition and after satisfactory installation and commissioning and demonstration.
- 2.14 In case of foreign supplier, the Indian Agent who shall maintain supplied stores/goods/equipments during contract period shall be given in the Technical Offer.
- 2.15 The owners of the Instrumented Aircraft will have to provide comprehensive Insurance, covering all usual risks for their crew, scientists and also for Charterers one scientist (liability of Rs. 10 lakhs per person) and the IITM / participating Institute's equipment (liability of Rs. 70.0 lakhs, in words Rs. seventy lakhs), while on-board to an accident/ damage/ disaster during experiment. Insurance shall covered for deep sea operations also.
- 2.16 FORWARDING OF SHIPPING DOCUMENTS ETC. TO THE CONSIGNEE
- 2.16.1 Port of Delivery shall be intimated by the IITM.
- 2.16.2 Advance shipment intimation shall be sent to IITM, by the Tenderer.
- 2.17 INSPECTION AND WARRANTY:
- 2.17.1 The inspection of the consignment on receipt in India shall also be carried out before taking over by IITM, by the ultimate consignee or his nominee.
- 2.17.2 In all cases, whether inspection is carried out by IITM Inspector or not, Manufacturer's Test Certificate shall invariably accompany the equipment.
- 2.17.3 Instruments / Equipments /Components and all the materials, supplied against the order must be provided with standard / one year guaranty/warranty against manufacturing and functional defects and the date of warranty / guarantee shall commence from the date of installation / commissioning.
- 2.18 Other Terms:**
- 2.18.1 Agency Commission: Shall be payable to Indian Agent, after installation and testing of the equipment. The payment shall be made in Indian

Rupees only.

2.18.2 Banking / L.C. Charges : In India on IITM's account and abroad on Supplier's account, at actuals on opening of L.C. All charges for amendment of L.C. after its opening shall be on Supplier's account.

2.18.3 Bidder has to sign a Non Disclosure Agreement with IITM.

2.18.4 The supplier shall be responsible for obtaining permission for export from the govt. of the country of the origin. All expenses in this regard will be borne by the supplier.

SECTION IV: GENERAL TERMS AND CONDITIONS (GTC)

1. Criteria for pre-qualification of tender and negotiations

Specifications conforming to the requirement or better than that, Past Performance, Financial Soundness, Technical Competence, Total Cost and Organizational Capability of the Tenderer to provide installation, commissioning, and spare parts supply shall be some of the crucial parameters for pre-qualification of tenderers to be called for discussions.

The tender will be rejected if:

A. Not furnishing details of the pilots, aircraft engineer, instrument engineer and scientists details

B. Instrumented Aircraft not fitted with:-

- (i) Emergency Flotation Equipment/Gear.
- (ii) Crew Survival Packs.
- (iii) VHF.

- (iv) Automatic Direction Finder (ADF).
- (v) Radar Altimeter.
- (vi) HF Radio.
- (vii) VHF Aeronautical Radios.
- (viii) Marine VHF Communications.
- (ix) Global Positioning System.

If all the items mentioned in "Required Technical Specifications" are not possible to provide, bidders should clearly indicate what maximum items could be possible to provide in the technical bid

Bidder should indicate minimum mobilization time required for the instrumented aircraft from the country of origin to Mumbai/Pune, India.

2. Re-tendering

On finding inadequate response to Tender Notice or if the Prices quoted are substantially high and negotiations with the tenderers have not resulted in any positive response IITM may accept or order re-tendering.

In case a ring is suspected, re-tendering will normally be resorted to.

3. Performance Security Deposit

- 3.1 The Performance Security Deposit as per IBIB Clause 26.1 shall be for entire period from acceptance of Contract to completion of program plus 60 days.
- 3.2 The proceeds of the Performance Security Deposit shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.
- 3.3 The Performance Security Deposit will be discharged by IITM and returned to the Supplier not later than 60 days following the date of completion of the Supplier's performance obligations, including the warranty obligations under the contract.
- 3.4 In the event of any contract amendment, the Supplier shall, within 21 days of receipt of such amendment, furnish the amendment to the Performance Security Deposit, rendering the same valid for the duration of the Contract, as amended for further period of 60 days thereafter.

4. Country of Origin

- 4.1. All Goods and Services supplied under the Contract shall have their origin in the member countries and territories eligible.
- 4.2. For purposes of this Clause "origin" means the place where the Goods produced, or from which the Services are supplied. Goods are produced when, through manufacturing, processing or substantial and manor assembling of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.
- 4.3. The country of origin of Goods and Services is distinct from the nationality of the Supplier.

5. Standards

The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications and when no applicable standard is mentioned; to the authoritative standard appropriate to the Goods country of origin and such standards shall be the latest issued by the concerned institution.

6. Patent Rights

The Supplier shall indemnify IITM against all third-party claims of infringement of patent, trademark, Copy Right or industrial design rights arising from us of the Goods or any part thereof in India.

7. Tender Specifications

- 7.1 The specifications for the items quoted should be explicitly clear and all available technical literature, catalogues and other data in support of the specifications of the items should be furnished along with the Tender. In the event of an alternative offered by the Tenderer, full specifications, details, literature, etc., which may justify consideration of such alternative offer, need to be given.
- 7.2 It should specifically be mentioned as to whether the price quoted includes all taxes and duties. Central Sales tax and/or other duties and levies where legally leviable and intended to be claimed should be distinctly shown separately in the Tender. Packing, Forwarding and handling charges, etc., if any, to be quoted separately.
- 7.3 The Tenderer should provide all the information asked for in the Form for Details about the Tenderer.
- 7.4 The Tenderer has to state in detail the Electrical Power/UPS requirements, floor Space, head room, foundation needed and also to state whether Air-conditioned environment is needed to house the system and to run the tests, i.e., pre-installation facilities required for installation, may please be intimated in the Technical Bid.

8. Validity of Tender:-

The quotations should be valid, for a period of 180 days from the last date of receipt of the Tender.

9. Inspections and Tests

- 9.1 IITM or its representative shall have the right to inspect and/or to test the Goods and services to confirm their conformity to the Contract specifications at no extra cost to IITM. IITM shall notify the Supplier in writing in a timely manner of the identity of any representatives retained for these purposes.
- 9.2 The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at point of delivery and/or at the Goods final destination. If conducted on the premises of the Supplier or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data shall be furnished to the inspectors at no charge to IITM.
- 9.3 Should any inspected or tested Goods fail to conform to the specifications, IITM may reject the goods and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to IITM.
- 9.4 IITM's right to inspect test and, where necessary, reject the Goods after their arrival at Project Site shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by IITM or its representative prior to the Goods shipment.
- 9.5 **Nothing in GTC Clause 10 shall in any way absolve** the Supplier from any warranty or other obligations under this Contract.

10. Packing

The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, and the remoteness of the Goods final destination and the absence of heavy handling facilities at all point in transit.

11. Delivery and Documents

Delivery of the Goods and services shall be made by the Supplier in accordance with the terms specified by IITM in the Work/Purchase Order.

12. Insurance

Insurance shall be arranged as specified.

13. Spare Parts

The Supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier :

13.1 Such spare parts as IITM may elect to Purchase from the Supplier, providing that this election shall not absolve the Supplier of any warranty obligations under the Contract; and

13.2 Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spares. Other spare parts and components shall be supplied as promptly as possible immediately.

14. Warranty

14.1 The Supplier warrants that the Goods supplied under this Contract are usable of the most recent or current models and those they incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The Supplier further warrants that all Goods supplied under this Contract shall have no defect arising from design, materials or workmanship (except when the design and/or material is required by IITM's Specifications) or from any act or omission of the Supplier, that may develop under normal use of the supplied Goods in the conditions prevailing in the country of final destination.

14.2 This warranty shall remain valid for the contract period after the Goods or any portion thereof as the case may be, have been delivered, commissioned and accepted at the final destination indicated in the Contract, after the date of receipt of goods at the final destination whichever period concludes earlier, **unless specified otherwise in the STC.**

14.3 IITM shall promptly notify the Supplier in writing of any claims arising under this warranty

14.4 Upon receipt of such notice, the Supplier, with all reasonable speed, repair or replace the defective goods or parts thereof, free of cost at the ultimate destination. The Supplier shall take over the replaced parts/goods at the time of their replacement. No claim whatsoever shall lie on IITM for the replaced parts/goods thereafter.

14.5 If the Supplier, having been notified, fails to remedy the defect(s) within a reasonable, IITM may proceed to take such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which IITM may have against the Supplier under the Contract.

14.6 If the down time is more than eight hours, supplier shall provide temporary replacement of the defective component and remove the defect.

14.7 The Bidder must indicate who will maintain equipment/instrument during service period by giving the name of Firm, address, contact person, phone no. and fax no. etc in the Technical Bid.

15 Payment

15.1 The methods and conditions of payment to be made to the Supplier under this Contract shall be specified in the STC.

15.2 The Supplier's request(s) for payment shall be made to IITM in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and the Services performed, and by documents, submitted pursuant to GTC Clause 12, and upon fulfillment of other obligations stipulated in the contract.

16 Prices

Prices payable to the Supplier as stated in the Contract shall not be changed and remains applicable during the performance of the Contract.

17 Advance payment

IITM being an autonomous organization of Govt. of India, no advance payment shall be made.

18 Penalty Clause

1. Subject to GTC Clause 20, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, IITM shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as penalty, a sum equivalent to as specified in 19.2 and/or in Clause-21 of the contract price of the non performance or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to maximum deduction of the percentage specified therein. Once the maximum is reached, IITM may consider termination of the Contract pursuant to IBIB Clause 26 resulting in forfeiture of the Performance Security Deposit.
2. If all the data is not transferred to IITM, then 10 % of the total cost of the contract will be withheld.

19 Force Majeure

19.1 Notwithstanding the provisions of GTC Clause 19, the Supplier shall not be liable for forfeiture of its performance security, penalty or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

19.2 For purposes of this clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

19.3 If a Force Majeure situation arises, the Supplier shall promptly notify IITM in writing of such conditions and the cause thereof. Unless otherwise directed by IITM in writing, the Supplier shall continue to perform its obligations under the Contract as far as it is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure.

20 Liquidated Damages

The applicable rate is 0.5% of contract value per week and the maximum deduction is 10% of the contract price.

21 Applicable Law

The Contract shall be interpreted in accordance with the laws of the Union of India.

22 Applicability to Other Terms and Conditions

These General Terms and Conditions shall apply to the extent that they are not superseded by provisions in other parts of the Contract.

23 Exemptions and preferences to small scale industries

The Small Scale Industries will be given following exemption and preferences in terms of letter No. 21(1)/2000-FP&M dated 28.8.2000 of Ministry of Small Scale Industries & Agro and Rural Industries, New Delhi on production of necessary registration.

- i. Issue of Tender sets free of cost.
- ii. Exemption from Payment of Earnest Money Deposit or Bid Security
- iii. Waiver of Performance Security Deposit to the Monetary limit for which the unit is registered.
- iv. Price preference upto 15% over the quotation of large-scale units.

24 Tenderers must ensure the following while submitting the Tender:-

25.1 Tenderer should state whether he is a relative of any employee of INDIAN INSTITUTE OF TROPICAL METEOROLOGY (IITM) and give the following certificate in the form for details of the Tenderer (s):

“ I / We have fully understood the foregoing general terms & conditions **of tender as well as the special terms and conditions** and having accepted the same in toto and I / we have made my / our offer keeping in view those terms and conditions. I / we fully agree that once I / We have endorsed in whatsoever and whichever way my / our signatures herein below all conditions whatsoever way mentioned by me / us which may not be acceptable to you / your principals shall be deemed to be / withdrawn by me / us and am/ are fully aware that no grievances whatsoever shall be entertained by you if our tender / quotation is not accepted / finalized.”

- 25.2 Tenderer sending their tenders by post/courier (mail) will do so solely at their own risk and IITM will not be responsible for any loss in transit or postal delay.
 - 25.3 Discount offered should be mentioned clearly in the commercial bid only.
 - 25.4 The item should be supplied with manuals and the manuals including technical drawings should be complete in all respects to operate the system without any problem. If the manuals are on chargeable basis, the same should be specified in the offer.
 - 25.5 It should be noted by the Tenderer(s) that by entering into this contract IITM is not precluded from entering into similar contracts with any one else of their choice at any time during the continuance of this contract.
 - 25.6 The supplier on receipt of the Purchase/work order must acknowledge.
 - 25.7 IITM shall have the right to issue addenda to tender documents to clarify amend, modify, supplement or delete any of the conditions clauses or delete any of the conditions clauses or items stated therein. Each addendum so issued shall form part of original invitation to the Tender.
 - 25.8 In case the Bid is not accepted, or otherwise IITM has elected to withdraw or cancel the invitation to the Tender for which IITM shall, have the right to do so, at any time, the Tenderer shall not be entitled to claim any cost/charges/expenses incidental to or incurred by the Tenderer through or in connection with the submission of the offer. The Earnest Money Deposit paid by the Tenderers with the Tender will be refunded to them in due course without interest.
- 26 **Installation:** Bidder shall be responsible for installation / demonstration wherever applicable and for after sales service during the warranty.
- 26.1 The defects, if any, during the guarantee period are to be rectified free of charge by arranging free replacement wherever necessary.
 - 26.2 Pre installation information to be supplied 3 months before dispatch date.
27. The Director, IITM reserves the right to accept the tender in full or in part or to reject the lowest or any or all tenders without assigning any reason.
28. No Sub-contracting will be allowed for installation or maintaining system/equipment/instrument during warranty period.

29. The Tenderer should note that the General Terms and Conditions are in addition to the Special Terms and Conditions of Tender, which form an integral part of the General Terms and Conditions of the Tender, and any of the General Terms and Conditions of Tender may be altered by the Special Terms and Conditions of Tender.

30. Cancellation of order

IITM reserves the right to cancel the order without any liability in case the stores/goods/equipments are not supplied within the stipulated period and for non-fulfillment of specifications.

31. Replacement of parts

If any equipment or part thereof be lost or rendered defective during transit, a fresh order will be placed on the supplier for such loss or defective equipment, in which case the supplier shall arrange for the supply of the equipment or part thereof, as the case may be, at the earliest date of such order at the same price as allowed in the original order on the same general terms and conditions.

32. Arbitration

Any dispute between the parties on the purchase would be settled by arbitration. The place of arbitration proceedings shall be at the place of the consignee. Applicable laws shall be laws of Union of India.

SECTION V-Technical Specifications

ITEM No. 1: Technical specifications for Cloud Physics Aircraft

(I) Aircraft Requirements

The proposed aircraft would be a pressurized one and is required to house instruments, crew team, scientists and engineers. The aircraft should have flying capacity for 2 (pilots) + 3 (engineers and scientists). The required aircraft crew and other scientific and engineering staff will be:

- Two pilots
- One aircraft maintenance engineer
- One instrumentation engineer for online maintenance of the instruments aboard aircraft.
- Mission Scientist for archival, retrieval, quality control of the data, designing flight patterns, seeding and training.

Operational Requirements

Parameter	Value
Minimum Altitude	500 ft
Maximum Altitude (At least)	22000 ft
Cruising Speed (At least)	240 knots
Sampling Speed	100 m/s
Ascent rate	300 ft /min
Endurance	3-5 hours
Range	2000- 3000 km
Instruments	Should have full dual IFR instrumentation

(III) Other Requirements

- Aircraft and the crew should have enough prior experience of participation in such experiments.
- There should be at least two free-slots available with power connection so as to install an instrument of CAIPEEX from IITM / participating institutions.

- Provision for mounting the cloud/rain water collecting gadget in the aircraft
- Aircraft should be capable of flying over deep sea (up to 200 nm) with all necessary safety gadgets onboard.

(b) On-board Instruments

The aircraft should be equipped with an on-board instrumentation system including a telemetry link to the operations base. The system will record time in UTC, GPS position. The aircraft should be fitted with following instruments.

VARIABLE	INSTRUMENT	RANGE	ACCURACY	RESOLUTION	FREQUENCY
Air temperature	Rosemount 102DB1CB or equivalent	-50°C to +50°C	0.1°C	0.01°C	1 Hz
Air temperature (reverse flow)	0.038" DIA. Bead Thermistor or equivalent	-30°C to +50°C	0.05°C/0.3°C incl DHC	0.01°C	< 1 s TC
Relative humidity (reverse flow)	Thermoset Polymer RH Sensor or equivalent	0 to 100% RH	2% RH	0.1% RH	5 s TC @ 20°C
Barometric pressure	MEMS Pressure Sensor or equivalent	0 to 110000 Pa	100 Pa	10 Pa	20 Hz
u wind component	Extended Kalman Filter (EKF) or equivalent		0.50 m/s @ 75 m/s TAS	0.01 m/s	5 Hz
v wind component	Extended Kalman Filter (EKF) or equivalent		0.50 m/s @ 75 m/s TAS	0.01 m/s	5 Hz
w wind component	Extended Kalman Filter (EKF) or equivalent		0.50 m/s @ 75 m/s TAS	0.01 m/s	5 Hz
Position (Lat/Long)	WAAS DGPS or equivalent		2 m (2 σ)	< 1 m	5 Hz
Altitude	WAAS DGPS or equivalent	-300 to 18000 m	5 m (2 σ)	< 1 m	5 Hz
Geometric Altitude	King KRA 405 Radar Altimeter or equivalent	0 to 2000 ft	3% < 500 ft 5% > 500 ft	0.48 ft (0.15 m)	

Roll Attitude (°)	MEMS IMU/GPS/EKF or equivalent	-60 to +60°	0.1°	0.01°	5 Hz
Pitch Attitude (°)	MEMS IMU/GPS/EKF or equivalent	-60 to +60°	0.2°	0.01°	5 Hz
Yaw Attitude (°)/ Heading	MEMS IMU/GPS/EKF or equivalent	0 to 360°	0.1°	0.01°	5 Hz
Angle of attack (°)	MEMS Pressure Sensor or equivalent	-15 to +15°	0.03° @ 150 m/s	0.001° @ 150 m/s	20 Hz
Side-slip (°)	MEMS Pressure Sensor or equivalent	-15 to +15°	0.03° @ 150 m/s	0.001° @ 150 m/s	20 Hz
True Air Speed	MEMS Pressure Sensor or equivalent	0 to 150 m/s	0.1 m/s	0.01 m/s	20 Hz
Logging, telemetry & event markers	ESD DTS (GPS) or equivalent				1 Hz
Cloud droplet spectra	DMT CDP or equivalent	2 to 50 µm		1 to 2 µm, 30 bins	1 Hz
Cloud particle spectra	DMT CIP or equivalent	25 to 1550 µm		25 µm, 62 bins	1 Hz
Cloud particle image	DMT CIP or equivalent	25 to 1550 µm		25 µm	
Precipitation imaging and spectra	DMT PIP or equivalent	100 to 6000 µm			
Liquid water content	DMT LWC-100 or equivalent	0 to 3 g/m ³	0.05 g/m ³	0.01 g/m ³	1 Hz
Liquid water content	CDP calculated or equivalent	> 3 g/m ³			1 Hz
Isokinetic aerosol inlet	Brechtel double diffuser inlet or equivalent	28 lpm			100 m/s
Aerosol spectrometer	PMS PCASP SPP-200 or equivalent	0.1 to 3 µm		0.02 µm, 30 bins	1 Hz
CCN	DMT CCN counter or equivalent	0.5 to 10 µm 0.1 to 1.2 % SS	see text	0.5 µm, 20 bins	1 Hz
Gadget for cloud water collection					

Aerosol Chemistry

Particle into Liquid Sampler (PILS) for the collection of ambient aerosols, coupled with Ion Chromatographs (IC) for determining the ionic composition (anions and cations) of atmospheric aerosols.

Trace Gases

Measurement	Range
O ₃	1 ppb – 100 ppm
SO ₂	0.3-200 ppb
CO	<5 ppb
CO ₂	
NO/NO ₂ /NO _y	NO ~10 ppt @ 10 s NO ₂ ~50 ppt @10 s NO _y ~100 ppt @10 s

Instruments suitable for airborne operations or Multilevel automated Cannister sampling for trace gases.

Radiation Equipment

Radiation Parameters	
Measurement	Range
Short-wave irradiance, up- & downwelling	285-2800 nm
Long-wave irradiance, up- & downwelling	4-50 μm

Aircraft should be equipped with Continuous Tracer (SF₆) Analyzer for real-time, in-situ measurement of SF₆ with sensitivity better than 5 ppt in spary of .7 liters/sec.

Periodic Calibrations

The bidder should do periodical calibrations of the instruments and provide reports to IITM. The time period for calibrations will be decided by IITM.

Following are NO GO scientific instruments:

Instruments measuring droplet size, cloud condensation nuclei, cloud imaging probe and weather parameters (temperature, wind and humidity).

In case of failure of any no-go instruments immediate replacement should be made available.

Flights will not be conducted if any one of these instruments is not working.

Aircraft:

Spares for essential avionic instruments such as: artificial horizon, Gyro should be available for replacement incase of failures.

ITEM NO: 2 SPECIFICATIONS FOR THE SEEDER AIRCRAFT EQUIPPED WITH FLARE SYSTEM

Sl. No	Item	Specification required
Cloud Seeding Aircraft		
1	Capability	(a) Should be capable to seed warm clouds. (b) Should be capable of both day and night operations. (c) Should be capable to record Cloud Seeding events (time and position stamps) in the air and transmit the same to radar and cloud physics aircraft.
2	Flight certification	Should be certified and cleared for Cloud seeding by a regulatory agency, such as FAA (Federal Aviation Authority, USA) or Aviation Authority of country of origin or the Director General of Civil Aviation, INDIA.
3	Requirements	Must have on-board radar & GPS.
4	Engine	Should be a twin-engine aircraft.

5	Cruise speed	Should have cruise Speed in excess of 200 mph.
6	Altitude	The aircraft should be capable of operating up to 10000 feet.
7	Flying Endurance	Flying endurance should be ~ 3.0 hrs.
8	Rate of climb	Should have a good rate of Climb - more than 1500 ft. per minute.
9	Instrumentation	Should have full dual IFR instrumentation.
10	Data Communication	Must have data link equipment capable of sending data from the aircraft to radar in real time.
11	Transmission facility	Should have necessary arrangements to transmit GPS location of Cloud Seeding event to the ground radar in real-time.
12	Icing Condition	Should meet all requirements to fly and to conduct cloud seeding operations at an icing level.

The aircraft should also be able to spray hygroscopic salt at the base of the suitable clouds. The aircraft should be equipped with a system for storing and spraying about 500 kg of the material in one sortie. The size distribution and material quality will be as decided by IITM.

Aircraft should also be able to accommodate two IITM scientists onboard.

The seeder aircraft should be equipped with SF₆ release system.

Hygroscopic: *Size:* geometric mean 2 to 10 micrometer with geometric standard deviation of 1 micrometer. Duly certified by the manufacturer.

AGI flares: Certified sizes, provide ice nucleating temperature dependent spectrum.

EXPERIENCED CREW & SCIENTIST:

Bidder shall provide two licensed, qualified and experienced Pilots for Aircraft for the duration of chartered period. Bidder should provide details of the Pilots, Engineer and Scientists.

Following are the requirements for the Pilot

Airline Transport Pilot certificate(s).

Should have experience of :

3000 minimum total flight hours in fixed wing airplanes

1500 minimum total flight hours in multi-engine airplanes

500 minimum hours as Pilot in command of powered airplanes

500 minimum hours of cloud measurement and/or cloud seeding flight

500 minimum instrument flight hours

Mountain flight experience

Low level flight and/or Agricultural flight rated

"First Class" medicals certificate. NOT carry or permit waivers.

Advantageous: Formation flight approved, decompression chamber accredited, remote area survival course accredited, previous appointment as Chief/Senior Pilot, proven ability to operate in remote areas for unspecified periods.

The statement in this connection should be provided.

Mission Scientist

Scientists should have previous experience of airborne aerosol, cloud microphysics data collection, retrieval, analysis and experience in both warm and cold cloud seeding procedures. Scientists should have publications in reputed peer-reviewed International journals on the subjects of cloud physics and cloud seeding. Bidder should provide brief CV of the scientists.

SAFETY EQUIPMENT:

The Aircraft should be equipped with all the necessary gadgets for safe flying operations in clouds, such as navigational, communication equipment and life saving appliances.

VALID CERTIFICATES:

The owner should possess and carry all the necessary and essential certificates, issued from concerned Civil Aviation Authority pertaining to Aircraft operation and the Crew during the charter period.

Item No. : 3 Specifications for C-BAND DOPPLER / C BAND DOPPLER POLARIMETRIC RADAR

Technical specifications of a suitable radar described below should be given at the time of bidding.

This specification outlines the minimum technical requirements for the supply of one stationary weather radar systems as remote sensors for meteorological purposes including full **Doppler** and **polarimetric** capabilities.

The Doppler polarimetric weather radar systems shall operate in the C-band frequency range having an angular resolution corresponding to its beam width of 1 degree.

The polarimetric radar shall enable full meteorological surveillance of a circular geographical area with a radius of up to 250 km around the radar site. The detection capability of significant hydrometeors shall reach up to a distance of 125 km in Doppler/velocity (Short Pulse) mode and 250 km in Precipitation/Intensity (Long Pulse) mode.

The radar shall provide ingest data for precipitation (R), intensity (Z), turbulence (W) and velocity (V), **differential reflectivity (ZDR), differential propagation phase (PhiDP), specific differential phase (KDP) and correlation coefficient (RhoHV), LDR and σ** with extremely high accuracy in all modes of operation. The radar shall deliver these data sets in parallel on a polar grid at azimuth/elevation increments of at least the beam width size, and range increments between 50 m and 1 km.

5 minutes volume scan, calibration checks on daily basis. Sensitivity 10 dbz at 100 km or better.

The radar shall operate continuously to supply information relating to rainfall position and rate as well as early warnings in case of hazardous weather phenomena.

The radar shall be used for cloud seeding purposes by use of airplanes.

The systems shall employ up-to-date technology, i.e. the radar shall be composed of a **Magnetron transmitter with solid-state modulator, digital receiver, digital servo and network-based control system.**

The processing systems shall be flexible in order to match the required applications ranging from reliable day-to-day operations up to research capabilities by configuring the scanning and the data processing accordingly.

The processing and display systems shall enable complete analysis of precipitation patterns according to common international meteorological standards. Cutting-edge technology regarding image-processing algorithms is required in order to support automated recognition of severe weather patterns as well as automated alerting according to configurable warning thresholds.

The bidders should give a clearly-documented performance specification for their proposed installation. This should include the estimation of sensitivity and accuracy for the basic data, stating the operational conditions under which these are achieved.

The systems shall store and organize acquired data in a specified standard format that is made available to the user.

The systems shall display variable data at specified intervals of range, value and repetition time in color-coded graphical format.

The systems shall be capable of transmitting data in a known standard format at specified intervals to a remote processing center by using an efficient way of data compression. This processing center shall be able to process, display, archive and distribute the radar data to a number of remote users.

Local control of all relevant functions should be provided at the radar installation for maintenance purposes.

The systems shall be equipped with a comprehensive state-of-the-art BITE (Built In Test Equipment) system that supports manual and automatic diagnostics.

The systems shall provide automated tools that support the calibration of the geographical alignment and the intensity measurements to a maximum extent.

The systems including the relevant software shall be suitable for cloud seeding and tracking of the seeding aircraft.

The radar should be in continuous operation during the entire period of the program. Any operational failure will attract penalty of Rs.1,00,000/- (Rupees One Lakh only) per day.

Specific Terms & Conditions

1. Flight hours will be considered from takeoff to landing.
2. Ferry flights for maintenance and other causes not related directly to the science missions will not be counted.
3. Flight hours that occurred when a no-go item was inoperative will not be counted, unless authorized in writing by the IITM representative.
4. The flight hours of a mission that was aborted due to aircraft equipment failure or other no go items before completion of its science objectives will not be counted. The IITM representative will determine whether the science mission was accomplished before the forced termination of the mission.
5. The seeder aircraft coordinates and the seeding information have to be transmitted by a telemetry system to the second aircraft that monitors the seeding effect.
6. The flight track of the seeder aircraft with the seeding markings has to be displayed on a computer screen in the monitoring aircraft for guiding it into the seeded cloud volume. The track of the monitoring aircraft will be displayed on the same screen, and will show the hits of the seeded cloud volumes as marked by the SF6 tracer.
7. The Bidder should be able to provide the cloud microphysics information from satellites.
8. The Bidder also should be able to provide, install and train IITM scientists at IITM in simulation of cloud dynamics, microphysics and seeding impacts using the latest state-of-art cloud model.

A. IMPLEMENTATION

1. The delivery period of all items of the tender to be procured as indicated in the tender unless otherwise mentioned in Part B of Section V and commissioning period will be 1 (one) week.
2. The technical specifications given in the schedule of requirements is indicative and the suppliers are required to quote for all the models / makes which conform to the given specifications.
3. All suppliers are required to quote for the specifications mentioned in the schedule of requirements. The final price should be inclusive of all the components mentioned in the said configuration
4. All suppliers are required to furnish the details of the makes and specifications of each component(s) which is going to be supplied with the equipment and should be mentioned in the technical bid.
5. All suppliers are required to specify the delivery schedules of each of the equipment to be delivered.
6. Whichever latest versions of the operating and the applications software are available at the time of delivery, as mentioned in the schedule of requirements should be pre-loaded.
7. Suppliers are required to provide the technical literature of the equipment listed in the schedule of requirements such as data sheets, etc. along with the bid.
8. Suppliers are required to give compliance for following scope of work and technical requirements

All the data collected (raw and processed) in the entire experiment will be the sole property of IITM.

Bidder shall make arrangements for pre-inspection of the required equipments for the program by the Officials of IITM by 1st week of June 2010.

SECTION VI: BID FORM AND PRICE SCHEDULE

Technical Bid format

Bidders should supply following information in the Technical Bid.

1. Name of Bidder
2. Validity of Bid
3. Name of Instrumented Aircraft / Seeding Aircraft:
 - b) Range:
 - c) Endurance:
 - d) Seating Capacity:
 - e) Cruise speed:
4. Instruments fitted in the Aircraft
5. Detailed Radar Specifications
6. Scientists Details
7. Call Sign / Registration No. of Aircraft
8. Year of Manufacture of Aircraft
9. Minimum Mobilization time required.
10. Bidder's total fleet
11. Past experience in cloud and aerosol observations and seeding
12. Bidders operational safety record.
13. Insurance details.
14. Information asked in Section V of the Terms and conditions in the Tender Document.
15. Acceptance of the Terms and conditions in Section V

BID FORM AND PRICE SCHEDULE

Tender Reference No. :

Item No. :

Name of the Stores/ Goods/Equipment:

For evaluation of bids closing market rate of Foreign exchange (B.C. Selling) as declared / intimated by SBI on the previous day of opening of Technical bids.

Landing fees, hanger charges and office fees will be paid by the IITM.

Bids shall be evaluated in equivalent Indian Rupees.

It is planned to have programme for 60 ± 10 days.

Sl. No	Description	Amount
1.	Mobilization (applicable to aircraft)	
2.	De-mobilization charges (applicable to aircraft)	
3.	Daily Hiring charges for 60 days	
4.	Flying hourly charges x 120 hrs excluding fuel charges (Fuel charges will be paid by IITM on actuals)	
5.	Flying hourly charges x 80 hrs excluding fuel charges (Fuel charges will be paid by IITM on actuals)	
6.	Charges for Radar for 60 days	
8.	Charges for Instrument Engineer (Accommodation, boarding and travel in India will be paid by IITM on actuals)	
9.	Charges for Aircraft Engineer (Accommodation, boarding and travel in India will be paid by IITM on actuals)	
10.	Charges for scientist (Accommodation, boarding and travel in India will be paid by IITM on actuals)	
11.	Any other charges	
		TOTAL

SECTION VII: FORM FOR DETAILS ABOUT THE TENDERER

(To be submitted with the Tender)

1. Tender Reference No : _____
2. Item No. : _____
3. Name of the Stores/Goods/Equipment : _____
4. Name of the Indian/Foreign Manufacturers : _____
or their authorized distributors, dealers or Indian Agent
5. Registered Office Address : _____
6. Address for Correspondence : _____
7. Please state whether party is Company/Firm/Agency:
Authorized Stockist/Dealer/Indian Agent
(In case of an Indian agent of a Foreign Supplier, please attach
copies of agency agreement and DGSD registration)
8. Total value of Annual Turn-Over/ Sales for the last 3 Years :
9. Sales Tax/Central Sales Tax Registration No:
and Date..... and Validity upto
10. Income Tax (PAN) No. : _____
G.I.R No./Circle / Ward
11. Name of the Bankers : _____
12. Address of the Bankers : _____
13. Past Performance of the firm/ Company : _____
Please enclose list of Parties (Scientific and
Technical Institutions) stating their Names and
addresses with telephone no. and the names of
same or similar items supplied to them during
Last three years. Please enclose the reference letters from clients.

S. No	Type of Stores/Goods/ Equipment	Name of the client	Value of the Purchase Order	Date of award of Purchase Order	Date of completion

14. Financial Soundness :
(Please enclose copies of certified financial statements for the last three years.)

15. Technical Competence.& Work Experience in India :

16. Organisational Capability :

No. of qualified engineers:

Name of the key personnel & qualifications:

17. Whether any relative of Tenderer is working in IITM. If so, give his name, designation and place of posting :

18. Details of EMD: Demand Draft/Pay Order No..... Dt.....
Amount Rs.....of.....(Name of Bank and Branch) Payable at (Name of City)
Bank Guarantee No..... Dt.....
FDR No.....Dt.....

19. Whether the extra terms quoted and the prices : Yes / No
are open to negotiations.

“I/We have fully understood the foregoing general terms & conditions of Tender as well as the Special terms & conditions of Tender given in the Tender Document and having accepted the same in to and I /We have made my / our offer keeping in view those terms and conditions. I/We fully agree that once I / We have endorsed in whatsoever and whichever way my/our signatures herein below all conditions whatsoever way mentioned by me / us which may not be acceptable to you / your principals shall be deemed to be withdrawn by me / us and am / are fully aware that no grievances whatsoever shall be entertained by you if our tender / quotation is not accepted / finalized”

Place
Date

Office Seal / Stamp

Name, Designation and
Signature of the Authorised
Signatory

SECTION VIII: PROFORMA FOR BANK GUARANTEE FOR PERFORMANCE BOND

Ref: Bank Guarantee No. _____

Date _____

To

**Director,
Indian Institute of Tropical Meteorology,
Dr.Homi Bhabha Road,
Pashan, Pune-411 008. (India).**

Dear Sir,

In consideration of **Indian Institute of Tropical Meteorology** having its registered office at **Dr.Homi Bhabha Road, Pashan, Pune-411 008. (India)**. (hereinafter referred to as "THE IITM") which expression shall unless repugnant to the context or meaning thereof, include all its successors, administrators, executors and assigns and having entered into a Contract/Notification of Award of Contract dated _____ (hereinafter called "THE CONTRACT") which expression shall include all the amendments thereto with M/s. _____ having its Head/Registered Office at _____ (hereinafter referred to as "THE CONTRACTOR") which expression shall unless repugnant to the context or meaning thereof, shall include all its successors, administrators, executors and assigns and the contract having been unequivocally accepted by the Contractor resulting in a contract for an estimated value at Rs./US \$ _____ (Rupees/US Dollars _____) for **CAIPEEX Phase I Program**. Contract for hiring of an Instrumented Aircraft and the IITM having agreed that the Contractor shall furnish to the IITM Delivery cum Performance Guarantee for the services of Instrumented Aircraft as well as faithful performance of the entire contract to the extent of 5% of the value of the contract i.e. Rs./US \$ _____. We (Bank) _____ having its registered office at _____ (hereinafter referred to as "THE BANK" (which expression shall unless

repugnant to the context or meaning thereof, include all the successors, administrators, executors and assigns) do hereby guarantee and undertake to pay on demand to the IITM any money or all monies to the extent of Rs./US \$ _____ (Rupees/US Dollars _____) in aggregate on breach of contract by the contractor at any time without any demur, reservation, recourse, contest or protest and/or without any reference to the Contractor. Any such demand made by the IITM on the Bank shall be conclusive and binding notwithstanding any difference between the Charterer and the Contractor or any dispute pending before any Court, Tribunal, Arbitrators or any other authority. We agree that Guarantee herein contained shall be irrevocable and shall continue to be enforceable till it is discharged by the IITM in writing.

2. The IITM shall have the fullest liberty, without affecting in any way the liability of the Bank under this Guarantee from time to time, to extend the time for performance of the Contract by the Contractor or IITM & Contractor may mutually vary the terms of the Contract. The IITM shall have the fullest liberty, without affecting this Guarantee to postpone, from time to time exercise power vested in them or of any right which they might have against the Contractor and to exercise the same at any time in any manner and either to enforce or to forebear to enforce any covenants contained or implied in the Contract between the IITM and the Contractor or any other course of remedy or security available to IITM. The Bank shall not be released of its obligations under these presents by any exercise by the IITM of its liberty with reference to matters aforesaid or any of them or by reason of any other act or forbearance or other acts of IITM or omission on the part of the IITM or other matter of thing whatsoever which under law would, but for this provisions have the effect of relieving the Bank.

3. The Bank also agrees that the IITM to its option shall be entitled to enforce this Guarantee against the bank as a principal debtor, in the first instance, without proceeding against the Contractor and notwithstanding any security or other guarantee that IITM may have in relation to the Contractor's liabilities.

4. IITM shall have the unqualified option to operate this Bank Guarantee to recover Liquidated Damages as leviable under the contract. In that case the Bank Guarantee amount shall thereupon be

increased to the original amount by the Contractor or Contractor may alternatively submit Liquidated Damages recovered by IITM.

5. The Bank further agrees that the guarantee herein contained shall remain in full force during the period that is taken for the performance of the Contract and it shall continue to be enforceable till all the dues of the IITM under or by virtue of this Contract have been fully paid and its claim satisfied or discharged or till the IITM discharges the guarantee in writing.

6. We further agree that as between us and IITM for the purpose of this Guarantee any notice given to us by the IITM that the money is payable by the Contractor and any amount claimed in such notice by the IITM shall be conclusive and binding on us notwithstanding any difference between the IITM and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. We further agree that this Guarantee shall not be affected by any change in our constitution or that of the Contractor. We also undertake not to revoke this Guarantee during its currency.

7. Notwithstanding anything contained hereinabove, our liability under this Guarantee is limited to Rs./US \$ _____ (Rupees/US Dollars _____) in aggregate and it shall remain in full force upto and including sixty days after _____ unless extended further, from time to time for such period as may be instructed in writing by M/s. _____ whose behalf this Guarantee has been given in which case it shall remain in full force upto and including sixty (60) days after the extended date. Any claim under this Guarantee must be received by us before the expiry of sixty (60) days from _____ or before the expiry of 60 days from the extended date, if no such claim have been received by us within the sixty (60) days after the said date/extended date, the IITM's right under this Guarantee will cease. However, if such a claim has been received by us within and upto sixty (60) days after the said date/extended date, all the IITM's right under this Guarantee shall be valid and shall not cease until we have satisfied that claim.

The Bank confirms that this Guarantee has been issued with observance of the appropriate exchange control rules and regulation of the country.

8. We agree that this guarantee shall be governed and construed in accordance with Indian Laws and subject to the Exclusive Jurisdiction of Indian Court. The Bank also agrees that courts in New Delhi shall have exclusive jurisdiction.

Date this _____ day of _____ 2010 at _____

WITNESS:

SIGNATURE: _____

NAME

SIGNATURE: _____

NAME & DESIGNATION WITH

BANK STAMP

OFFICIAL ADDRESS

Section IX: BID SECUTIRY FORM

Whereas _____¹ (hereinafter called “the Bidder”) has submitted its bid dated _____ (date of submission of bid) for the supply of (Name and/or description of the goods) (Hereinafter called “the bid”).

KNOW ALL PEOPLE by these presented that WE _____ (Name of bank) of _____ (Name of Country), having our registered office at _____ (Address of bank) (Hereinafter called “the bank”, are bound unto Director, Indian Institute of Tropical Meteorology, Pune (Hereinafter called “the Purchaser”) in the sum of _____ for which payment well and truly to be made to the said Purchaser, the binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank this __ day of _____ 20__.

THE CONDITIONS of this obligation are:

1. If the Bidder withdraws its Bid during the period of bid validity specified by the Bidder on the Bid Form; or
2. If the Bidder, having been notified of the acceptance of its bid by the Purchaser during the period of bid validity;
 - (a) Fails or refuses to execute the Contract Form if required; or
 - (b) Fails or refuses to furnish the performance security, in accordance with the Instruction to Bidders.

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

This guarantee will remain in force up to and including forty-five (45) days after the period of the bid validity, and any demand in respect thereof should reach the Bank not later that the above date.

(Signature with seal of the Bank)

(Complete Contact Details with Tel./Fax/email.etc)

¹Name of Bidder