INDIAN INSTITUTE OF TROPICAL METEOROLOGY
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PS/125/13/2017 22nd December 2017

Sub: Minutes of the Pre-bid meeting of the "Hiring of Instrumented Research Aircraft, Seeder Aircraft and Various Services for CAIPEEX Project 2018" Qty - 01 Job (as per tender document) held on 27/11/2016 at IITM, Pune.

A Pre-bid meeting relating to the "Hiring of Instrumented Research Aircraft, Seeder Aircraft and Various Services for Caipeex Project 2018" Qty - 01 Job (as per tender document) held on 27/11/2016 at IITM, Pune.

In response to our Global Tender Notice No. PS/125/13/2017, representatives of the following prospective bidders / firms / companies had attended the meeting.
i) M/s. Kyathi Climate Modifiction Consultants LLP, Bangalore (KCMC-LLP)
ii) M/s.Pollution Equipment Control, Delhi (PEC)

Representative of the prospective bidders / firms / companies were asked about any suggestion, queries or technical advancement regarding tender document & equipment to be procured.

List of IITM instruments provided in Chapter 4, Section 4.1. Table 4 of the tender document was also revised and the updated table is shown in table 3 below.

The Institute's reply to the queries raised by M/s. Kyathi Climate Modifiction Consultants LLP, Bangalore is as given below:

Table 1

Sr. No	Clause Tender	Description	Query	IITM response
1	ITB- 1.1.1.	Bidders should not be associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by the Purchaser to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods to be purchased under this invitation of Bids.	Need clarification on this	Tender is prepared by CAIPEEX TEC, IITM
2	ITB- 1.13.2 (b)	Bidder who doesn't manufacture the goods it offers to supply shall submit Manufacturer's Authorization Form using the form specified in the bidding document to demonstrate that it has been duly authorized by the manufacturer of the goods to quote and/ or supply the goods.	As per our understanding this is not applicable to aircraft hiring.	Although this clause is applicable for purchase of new instruments, calibration and replacement of equipment need to be followed as per OEM guidelines (Please refer Section D of technical specifications)

3	GCC 2.12.1	The amount of the Performance Security will be 10% of the contract value, valid up to 60 days after the date of completion of contract obligations including warranty obligations	There is no advance being paid hence the Performance security should be removed	This statement on performance security is as per GFR rules. It was clarified that as other option,10% payment will be withheld at each stage of payment, until completion of all contractual obligations.
4	Chapter 4-4.13)	Imported items should be quoted in foreign currency preferable in USD only.	We understand that this is not applicable for services	Remains unchanged
5	Chapter 4-4.2 iii)	Training as specified below in 4.1	Description of training not specified	Training shall include 1) Onsite training: instrumentation operations, calibration, data quality, SOPs, etc. during the beginning of campaign with proper documentation and presentations 2) Data and support training: data and processing and products at the end of campaign
6	Chapter 4-4.2 iv)	On site comprehensive Warranty as specified in 4.1	We understand that this is not applicable for services	This statement is revised as the following: This is a service contract. **" 36 months** after their successful installation and acceptance by the purchaser" is not applicable in this case and instead, after completion of report and documentation and data services, 3 months will be for evaluation by IITM. This aspect is included in the payment schedule as detailed in table below. Wherever warranty is specified, it applies to the extended support for data services on call basis. This can be quoted per call and service.
7	PROFORMA S 05	Spares	Not applicable for services	This is not applicable as equipment spare parts (if need to be replaced) will be the responsibility of vendor, to ensure uninterrupted service. However, NOGO spare instruments must be provided as indicated in the technical specifications
8	4.6 c (iv)	The bidder should qualify for the Non-scheduled Operations Permit (NSOP) as per mandatory requirements set by DGCA and obtain NSOP at the time of agreement. Bidder may provide all documents relating to NSOP at the time of agreement.	ANNEXURE E-PART III-14 asks for NSOP holder. Please clarify if it is required for the bid or needs to be submitted at the time of agreement.	The bidder should provide the Non-scheduled Operations Permit (NSOP) as per mandatory requirements set by DGCA and submit related documents at the time of bid.
9	Enclosure – I (A)- Table 1	Air inlets (three types are required; CVI inlet, isokinetic inlet and reverse flow inlet) 2-3 instrument racks	Use of both Isokinetic and CVI inlet would require a modification in our STC which takes 5-6 months. Kindly specify if it is a mandatory requirement.	It is mandatory to have all three types (CVI, isokinetic and reverse flow) of inlets.

10	Enclosure – I (A)- Table 1	Research Power	We need clarifications on the operational limitations and would like to have a discussion.	Mission specific research flights will be conducted.
11	Enclosure – I (A)- iii) Mission specific requirements	The proposed aircraft should be modified to carry at least 6 PMS canisters that are wing or Fuselage mounted.	We can provide 4 PMS canisters. CAPS, PIP, PCASP and CCP can be installed in canisters. AIMMS 30 can be installed on the bottom of a pylon, and does not need a canister. Kindly specify if this arrangement is acceptable. KCMC can elaborate further on choosing mission specific instruments for each flight during the pre bid conference.	The proposed aircraft should be modified to carry at least 4-6 PMS canisters that are wing or fuselage mounted or be able to accommodate mission specific instruments as defined by IITM.
12	Enclosure – I (A)- Table 3	# A proper mount for radiation instrumentation to be provided by the bidder to minimize the effect of attitude of the aircraft Radiation sensors could be Gimbel mounted to minimize the errors due to aircraft pitch and roll.	Modification and approval on STC for radiation sensors will take 5-6 months.	This is optional requirement
13	Enclosure – I (A)- (v) Data acquisition system	Bidder should ensure redundancy of data system for any failures. It is desired to have PADS system for data acquisition for easy access and dissemination of data.	We can provide the M-300 data acquisition system.	It is a must to have PADS data system as mentioned in tender document.
14	Enclosure – I (A)- (xii) Specific Terms & Conditions	Flight hours will be considered from takeoff to landing. Test flights will not be counted as flying hours.	It is observed that the specific instruments have to be switched on and off on the ground which consumes an average of 45 mins on each flight. Hence we request flight time should be counted from engine on to engine off. Calibration flights for instruments such as AIMMS is done on a regular basis and is an integral part of the scientific mission, hence we request these flights to be counted.	No change in criteria on counting flight hours.
15	Enclosure – I (B)- (C) Cloud seeding Flares	1700 Hygroscopic flares required	Quantity seems to be on the higher side. There is no mention of Glacogenic BIPs or Ejectables in the tender. These are essential for	It may be read as flares should be provided as per requirement. A few Glaciogenic ejectable flares may also be provided. (Complete technical information on flares be provided along with bid)

			conducting top seeding.	
16	Table 1, 2, 3 and 4 list of instruments	Aircraft, Pilots, Instruments, enclosure I, technical specifications etc	Request for an Elaborate Discussion.	Gust probe may not be needed, if AIMMS-3 is installed on aircraft. Charge sensor can be removed from the requirements.
17	GCC 2.21.1	Payment terms	Since majority of the cost involves mobilization of the aircraft and installation of the instruments, we request for change in the payment terms as below Signing of contract 10% On Arrival of the one aircraft 10% On Arrival of the second aircraft 10% On inspection and acceptance 10% 30 days of completion or 60 hours of flying-15% 60 days of completion or 120 hours 10% 90 days of completion or 180 hours 10% 120 days of completion or 240 hours 10% On submission of report 10% aircraft.	As given below in Table 2 below.

Table 2

No.	Payment Item	Payment
A	On arrival of the aircraft, mobilization (including all permissions, establishment and commissioning of the aircraft base) and installation of all instruments and demonstration and acceptance of quality observations.	20 %
B	30 days of completion and 60 hrs. of flying	15 %
C	60 days of completion & 120 hrs. of flying	15 %
D	120 days of completion & 240 hrs. of flying, submission of the operational report and demobilization of aircraft (at Solapur/Pune), instruments, etc.	20 %
E	On receipt of calibrated and corrected data and Final Report Submission by the contractor within 90 days	10%
F	Evaluation of report and acceptance of Data by IITM within 3 months	20 %
G	In case 240 hours of flying hours are not met in a year, the remaining hours will be shifted to the next campaign year without additional cost implications to the IITM and payment will be made on pro-rata basis.	

Table 3

Revised Table 4: List of Instrumentation from IITM

VARIABLE	INSTRUMENT	RANGE
Accumulation and coarse mode aerosol spectrometer (particle by particle)	Ultra High Sensitivity Aerosol Spectrometer	0.05 to 1 µm
Cloud droplet/particle size distribution	Cloud Imaging Probe (CIP)	25 to 1550 µm
Precipitation imaging and size distribution	Precipitation Imaging Probe (PIP)	100 to 6000 µm
Liquid water content	Hotwire Liquid Water Content (LWC)	0 to 3 g/m3
Nucleation mode aerosol spectrometer	High flow Differential Mobility Analyzer (DMA) or Humidified Tandum Differential Mobility Analyser (HTDMA)	0.01 to 0.5 µm
Aerosol particles collection for physical and chemical analysis and for energy dispersive Xray spectrometer (EDS)/Scanning Electron Microscopy (SEM) or Transmission Electron Microscopy (TEM) measurements for size, morphology, hygroscopicity and mixing state, etc.	Cascade Impactors, for size resolved sampling	
Black carbon (BC) mass concentration,	Athelometer for BC	
Observations of CO, CO2, H2O, CH4	Gas analyzers (for CO, CO2, H2O, CH4) –CRDS based	(water trap required)
Particle in liquid sampler (PILS)	Proper setup for the PILS inside the aircraft should be provided	Aerosol chemistry