

Tender Notice & Tender Documents

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

(PS/Tender/03/2015)

TENDER NOTICE

Director, Indian Institute of Tropical Meteorology (An autonomous Institute under the Ministry of Earth Science, Govt. of India), Dr.Homi Bhabha Road, Pashan, Pune- 411 008 (India) invites sealed tenders (Part-I – Technical Bid, Part-II – Financial Bid) in separate sealed covers from Manufacturers / Suppliers and their accredited selling agents for the supply, installation, commissioning, and satisfactory demonstration of ***“Instrumented Unmanned Aerial Vehicle” Qty – 01 Set.***

Tender documents with details can be obtained from Purchase & Stores Section of the Institute or can be downloaded from Institute’s website.

Last date of receipt of Tender at IITM, Pune : 2nd December 2015 at 12:00 hrs.
Opening of Tenders (Technical bids only) : 2nd December 2015 at 15:00 hrs.

The Institute reserves the right to reject any or all tenders without assigning any reason thereof. For details please visit Central Procurement Portal (CPP) <http://www.eprocure.gov.in> as well as this Institute’s Website: <http://www.tropmet.res.in>

**Scientific Officer Gr.-II, for Director
Email :vipin@tropmet.res.in**

INDIAN INSTITUTE OF TROPICAL METEOROLOGY
Pashan, Pune – 411 008

(Enclosure to Enquiry No. PS/128/10/2015/ _____ dated 03.11.2015)

TECHNICAL SPECIFICATIONS FOR “INSTRUMENTED UNMANNED AERIAL VEHICLE”
QTY - 01 Set.

TECHNICAL SPECIFICATIONS

1. Technical specifications and requirements for UAV

Table 1: IITM is interested in operating UAV with the following typical specifications and requirements.

Configuration	Airframe with electric and/or gasoline engine driven pusher propeller.
Payload (Scientific instruments)	5 to 6 kg
Maximum Altitude	3 km
Endurance	3 to 5 hrs
Maximum Operating Range	10 km (Line Of Sight) without any communication problems of “dropping packets”
Cruising Speed /Max speed Sampling speed	60 kmph / 100kmph 25 m/s
Flight controls	Both Manual and Autonomous As well as loiter/hold capability; return home on any failures
Navigation system	DGPS/GPS & waypoint - Autopilot system
Radio Control link	2 km
Telemetry real-time	10 km radius
Compartments/space for scientific payload	As per requirement
Take off / recovery	Wheeled and catapult launcher without causing stumbling block to scientific instruments.
Ground Control System	Both Auto and manual mode are required Ground control software and laptop RC for manual flight operations With feasibility of satellite based phone (or iridium phone) for long range flights.
Environmental conditions	-20 °C to +60 °C, cross wind handling 40 kmph, Relative humidity 0 to 100%
Scientific Payload	See Table 2

Data links and transfers	<p>Realtime data down linking to ground computer (through ground control system) in the field for verifying the data collection.</p> <p>Accessibility to Telemetry data files at the end of each mission.</p> <p>Mandatory parameters which should be recorded onboard and telemetered to ground station in each flight are – 1) GPS Time, 2) GPS Altitude, 3) Attitude of the vehicle, 4) Lat & Long and 5) Data from each instrument; all synchronized at the same time stamp.</p>
Integration of navigation system and payloads	<p>Should have Established plans for integration.</p> <p>Conduct instrument and aircraft compatibility tests.</p>
Mission Fuel capacity	<p>87 octane grade preferred for gasoline engines or any, which can be procured without any difficulty in India. For electric engines, ensure endurance requirements.</p>
Capability	<p>To operate over land and ocean (preferable with certification on icing condition)</p>
Ground support system (GCS)	<p>Power supply system, engine starter (GPU), transportation of the system, field repair kit.</p> <p>Additional supporting systems as required to operate and maintain (itemize)</p>
Training	<p>Operations and maintenance for O level facility</p>
Contingencies and responses to predictable events (like, what happens if there appears to be flight problem after launch; what happens if a UAV loses power; loss of telemetry, etc)	<p>Should have Established (predetermined) plans for execution</p>
Track record	<p>Prior experience if any (accumulated flight hours for any purpose)</p>
Expectations	<p>Quick Professional technical support to address the problems</p>

Table 2: Light weight and sufficiently small instruments to be integrated on the proposed UAV. This table gives the list and details of instruments to be included along with the UAV tender.

Parameter	Instrument	Range
Aerosol	Condensation Particle Counter	Particle size Range : 0.01 to greater than 1 μm Concentration range : 0 to 500,000 particles/cc
	Optical Particle Counter	Concentration range : 0 – 1 to 5 x 10 ⁵ particles/L Size range : 0.1 μm (or slightly higher) to 10 μm No. of channels: Minimum 6 , user selectable ranges
	Aethalometer	Concentration Range: 0 - 1 mg BC/m ³ Resolution: 0.001 μg BC/m ³
Solar Radiation	Pyranometers - 2 numbers	Spectral range : 0.3 μm (or below) to 2.8 μm (or more). Sensitivity: ~5 to 20 $\mu\text{V/W/m}^2$ Response time: < 5 s Accuracy : Higher accuracy in measurements is preferred
	Photosynthetically Active Radiation (PAR) sensors – 2 numbers	Spectral range: 0.4 – 0.7 μm Sensitivity: Typical 5 μA per 1000 $\mu\text{mol s}^{-1} \text{m}^{-2}$. Response Time: 10 μs Accuracy : Higher accuracy in measurements is preferred
Air Temperature and Relative Humidity	Standard probe is preferred	Range: -20 to 60°C ; 0 to 100% ; Accuracy: 0.3°C; 2%
Wind	Turbulence probe with temperature and humidity sensor.	Position and time to be logged along with wind, temperature and humidity measurements. Frequency of measurements should resolve the inertial and dissipation spectral range.
Inlet for air sampling	Isokinetic Aerosol Inlet	To be designed as per the maximum flow rates of the aerosol instruments specified above (can be designed in consultation with IITM scientists)
Data Acquisition System	Integration of all the proposed instruments and data acquisition @ 1 to 10 Hz range at same time stamp	To be worked out by the vendor in close association with IITM scientists.

Power	Power to scientific instruments & data logger	Vendor has to design the power cabling accordingly and also to install right kind/amount of batteries/generators.
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2) Position of each of the above payload:

Configuration for Aerosol, Solar Radiation and met parameters

Aerosol instruments should lie within the fuselage of the platform and aerosol sampling inlet (i.e., inlet for air sampling) need to be at the front side of the fuselage. Solar radiation instruments should protrude (~5 cm) outside of the fuselage (one upward and one downward side of the fuselage). Suitable probe for the meteorological parameters to be placed/fixed at the nose as used in the experiments done elsewhere.

Configuration for Turbulence probe

The turbulence probe position to be determined after the CFD analysis or through already established literature. CFD analysis should be demonstrated through simulations.

3) Typical mission profiles

Basically, the plan includes the steps to launch the UAV, climb to altitude, gain the first level flight course, descend at the end of the mission and land. Integrated with this plan is the science data acquisition plan as follows:

The platform should carry out the vertical profiling up to 3km altitude. The platform then should climb-down in stepwise altitude change, in steps of ~ 0.5 km of ~ 10 minutes (0.25 km in mission mode).

At each level, the platform should fly in a ‘box-pattern’ or in a ‘straight-line’ path upto 10 km or more. Initially, it is intended to fly within the so-called Safe-Flying-Zone (SFZ). Later fly outside the SFZ (upon the availability of the airspace and permissions). Moreover, it is expected that the flight plans would change slightly during the flight as mission opportunity develops (like, slight deviation of flight path to circumvent clouds for aerosol sampling, etc).

Total duration of the mission would be depending upon the aircraft fuel consumption (and/or power availability), launch and recovery times, limited profiling and stepwise segments.

4) UAV specific requirements

- a) UAV should be built to accommodate the proposed scientific payload that are wing or fuselage mounted.
- b) UAV should be sturdy, rigid and robust. Should be capable of flying under calm to moderate weather conditions (-20 °C to +60 °C, cross wind handling 40 kmph, Relative humidity 0 to 100%) with all necessary safety equipment onboard to land safely in case of any failure.
- c) Based on the proposed instruments, instrument integration plan with schematic is highly preferable. Final integration plan to be decided in consultation with IITM scientists.
- d) Data storage should be onboard as well as online at the ground station through telemetry. Real time telemetry capabilities.
- e) Complete details of capable flight modes.
- f) Details of built-in sensors like Navigation and Data Acquisition.
- g) Mobilization of the UAV.
- h) Environmental and airworthiness certification details of the UAV.
- i) Comprehensive maintenance schedule of the UAV.
- j) Training to be provided for UAV operations and maintenance, preferably in India.
- k) Life time and reliability of the UAV.
- l) Typical warranty and post warranty mechanisms.
- m) Pilots and engineers should be available on call, at least during the first year.
- n) Demonstration capability with some of the instrumentation onboard is preferable before opening the bid.
- o) Onboard estimation and instantaneous telemetry of wind data to GCS so as to identify the weather conditions ahead and take decision.
- p) Detailed Project Execution Plan with time lines.
- q) Auto-Pilot Software with programmable take-off, landing, and way points based upon GPS and altitude information.

5) Required important technical parameters

a. Technical Information of UAV

Sl No	Information Required	Vendor to specify
(a)	Range with maximum take-off weight	Provide tech info
(b)	Payload capacity	Provide tech info
(c)	Capable of interfacing the instrument(s) data with the avionics suite – please describe the avionics systems to be interfaced.	Provide tech info
(d)	Data on vibration of the airframe for electric and gasoline engine driven UAVs.	Provide tech info

b. Additional information

- Please provide details on the atmospheric/environmental conditions the UAV can withstand (e.g., wind, turbulence etc. along with intensity values).
- Status (whether Operational/Developmental)
- Base in India for technical support.
- Additional room to incorporate more instruments in future.

c. Logistical Support

Any other relevant information on capability of roles & additional facilities may also be specified.

6) IMPLEMENTATION

1. The technical specifications given in the Tables 1 & 2 are indicative and the Bidders are required to quote for all the models / makes which conform to the given specifications.
2. Bidders 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.
3. Bidders 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.
4. Bidders are required to specify the delivery schedule of the complete equipment to be delivered.
5. Whichever latest versions of the operating and the applications software are available at the time of delivery should be pre-loaded.

6. Bidders are required to provide the technical literature of the equipment listed in the Tables 1 & 2 including data sheets along with the bid.
7. Bidders are required to give compliance for following scope of work and technical requirements.

7) Scope of work

The scope of work and deliverables as stated in this section, which may be amended later or at the time of pre-bid meeting (if conducted), will become part of the Contract.

- a) IITM desires that the UAV with all the desired equipments installed onboard is built and delivered ready for research missions and field operations. The Instrumented UAV is to be delivered by the Bidder to IITM should be complete in all respects and must include all the items mentioned and any other items required for full functionality for the intended operations of the UAV which includes successful collection of data.
- b) The successful Bidder should provide an Instrumentation Engineer (having sufficient experience and knowledge on the supplied instrumented UAV) in India, for at least 12 missions, to operate, maintain, trouble shoot and calibrate the scientific instruments. The Instrumentation Engineer should also train IITM scientists on all the above aspects during the entire period of his stay in India at the site.
- c) Detailed manual and documentation on UAV and instrument modifications - both hard and soft copies.
- d) Detailed documentation on instrument integration - both hard and soft copies.
- e) Airworthiness certificate of UAV after modifications.
- f) Power and heat analysis for UAV and scientific instruments onboard.
- g) All recommended accessories and one set of tools to be provided by the supplier.
- h) All instruments calibration data and reports before modification and after modification.
- i) All instruments calibration data and reports after integration to a common data acquisition system.
- j) Computational Fluid Dynamics (CFD) analysis for UAV with instruments installed.
- k) Manuals and operational procedures
- l) Test flights to prove UAV performance, autopilot, power management and performance of each instrument at the destination in India.
- m) Scientific mission profiles and data quality analysis at the destination in India.
- n) Preferable time of delivery of the complete equipment is 9 to 12 months.

8) Inspection Instructions:

- (i) **Preliminary Design Review (PDR) meeting:** This will be held within 2 months of commencement of Contract at IITM, as per requirement. During this meeting, the whole process/scope of work as per Contract will be discussed in detail in the presence of IITM committee members as well as representatives of the Bidder/manufacturer of UAV/instruments. In the PDR meeting, critical issues related to instrument integration on UAV and data acquisition will be identified. This meeting can last up to a few days. As per requirement, there can be multiple PDR meetings.
- (ii) **Critical Design Review (CDR) meeting:** During CDR, the special designs/modifications being made exclusively for this Contract will be frozen by IITM committee and approval will be given to Bidder to go ahead in realizing these modifications. Also, whole program schedule will be reviewed again in detail; necessary actions shall be identified to make up for slippages, if any and critical decisions will be taken accordingly on approval of changes, if any. This meeting will normally be held at IITM about a month after the PDR; but can vary depending on the type of design efforts & time frames involved. The representatives of Bidder/manufacturer of UAV/instruments shall attend this meeting. As per requirement, there can be multiple CDR meetings.
- (iii) **Participation in modification and Integration:** IITM scientists will visit the Bidders' office/factory and participate during the modification of UAV and integration of instruments, if required. The expenditure towards the visits will be borne by IITM.

9) Training:

The Supplier shall provide training, at his cost, in theory, operation, maintenance and servicing of the UAV and atmospheric instruments installed, to IITM scientists for the required period in India. The training shall include the working and flying of the UAV, working of instruments, its calibration, integration of the same, computer hardware/software associated with sensors/instruments, Ground Control System and such other aspects which are considered essential for their optimal utilization. Training should include ground preparation time for UAV take off, preparation from starting point to landing point.

Terms & Conditions (For Technical Bid) :-

The Bidders submitting their proposals should be either the manufacturer or an authorized Indian dealer/agent of the UAV system. In case of authorized dealers, documentary proof of authorization valid as on date to be submitted in the technical proposal.

In case of foreign Bidders, the Bidder should have an office in India or must have an arrangement with an Indian company for on-site installation, integration and maintenance/warranty support.

The technical bid should contain the company profile and infrastructure of the Indian company that will support the maintenance activities.

The technical bid should also contain detailed information on Autopilot and Ground Control System configuration.

IITM may decide to visit the facility of the Bidder (or any customer site maintained by the Bidder). The Bidder should facilitate the above visit by IITM team.

Regulatory Authorities Permissions:

All the permissions from the regulatory authorities for importing, registration, airworthiness and flying of the UAV has to be obtained by the Bidder. IITM will provide necessary letters if required. Any expenses incurred for the above has to be borne by the Bidder. In case Bidder fails to obtain permission, IITM reserves the right to reject the system.

Acceptance:

The system will be accepted only after successful test flights at on-site, meeting IITM requirements.

Training

The Bidder should provide training to the concerned persons of IITM for the required period at free of charge. The training should be at IITM, Pune or at any suitable location in India as desired by IITM.

The technical bid should contain details of the training schedule.

Warranty

- The warranty will start from the date of issue of on-site Acceptance Certificate by IITM.
- The company shall provide an on-site extended comprehensive warranty of 3 years which shall be extended by 2 or more on mutual agreeable terms & conditions. On-site extended comprehensive warranty shall commence after the initial two years warranty.
- The payment during the 3 year extended warranty period shall be paid at the end of each half year on satisfactory performance during that period.
- The warranty shall be stopped in case of major events such as crash landing, non-traceability of UAV.
- The Bidder should submit necessary authorisation from the OEM substantiating that the OEM shall support the Bidder for installation, maintenance and the warranty for the total of 5 (2 + 3) years.

- The Bidder shall be the warranty provider for the payload / sensors, subsystems along with all the third party sub-systems which as a total constitute the UAV system.
- Under warranty and extended warranty period, the company shall provide all software, hardware and firmware updates to IITM at no extra cost.
- All software, hardware and firmware problems are to be rectified at IITM, Pune. A few situations where intervention in factory is required, shall be permitted on a case by case basis at no extra cost. The expenditures for sending the equipment from Pune to OEM facility will be borne by IITM. While the expenditure for sending the system from OEM facility after rectification to IITM, Pune shall be borne by the Bidder.
- The Bidder shall provide 24x7 support during the warranty period of 6 years.
- During the warranty period, if OEM engineers have to be deployed for fault rectification, they should be deployed at free of cost.
- Failed hard disks / memory devices shall not be returned to the Bidder.

Installation

- The Bidder shall prepare an Acceptance and Test Procedure (ATP) document which shall be sent to IITM after the PO is placed. The ATP document shall be finalised on mutual agreeable basis and will be used for acceptance of the system at IITM, Pune.
- System acceptance will be done at IITM, Pune.
- Bidder is responsible for problem free demonstration of the system at IITM during system acceptance at IITM and any onsite issues should be appropriately resolved by the Bidder.

TECHNICAL COMPLIANCE STATEMENT

1. Technical specifications and requirements for UAV :-

The Technical compliance statement is to be submitted completely filled in the below format w.r.t above details duly stamped and signed by the vendor along with technical bid.

Sr. No.	Configuration	Specification / Requirement	Complied (Yes / No.)	Remarks / Deviation, if any
	Configuration	Airframe with electric and/or gasoline engine driven pusher propeller.		
	Payload (Scientific instruments)	5 to 6 kg		
	Maximum Altitude	3 km		
	Endurance	3 to 5 hrs		
	Maximum Operating Range	10 km (Line Of Sight) without any communication problems of “dropping packets”		
	Cruising Speed /Max speed Sampling speed	60 kmph / 100kmph 25 m/s		
	Flight controls	Both Manual and Autonomous As well as loiter/hold capability; return home on any failures		
	Navigation system	DGPS/GPS & waypoint - Autopilot system		
	Radio Control link	2 km		
	Telemetry real-time	10 km radius		
	Compartments/space for scientific payload	As per requirement		
	Take off / recovery	Wheeled and catapult launcher without causing stumbling block to scientific instruments.		
	Ground Control System (GCS)	Both Auto and manual mode are required Ground control software and laptop		

		RC for manual flight operations With feasibility of satellite based phone (or iridium phone) for long range flights.		
	Environmental conditions	-20 °C to +60 °C, cross wind handling 40 kmph, Relative humidity 0 to 100%		
	Scientific Payload	See Table 2		
	Data links and transfers	Realtime data down linking to ground computer (through ground control system) in the field for verifying the data collection. Accessibility to Telemetry data files at the end of each mission. Mandatory parameters which should be recorded onboard and telemetered to ground station in each flight are – 1) GPS Time, 2) GPS Altitude, 3) Attitude of the vehicle, 4) Lat & Long and 5) Data from each instrument; all synchronized at the same time stamp.		
	Integration of navigation system and payloads	Should have Established plans for integration. Conduct instrument and aircraft compatibility tests.		
	Mission Fuel capacity	87 octane grade preferred for gasoline engines or any, which can be procured without any difficulty in India. For electric engines, ensure endurance requirements.		
	Capability	To operate over land and ocean (preferable with certification on icing		

		condition)		
	Ground support system (GCS)	Power supply system, engine starter (GPU), transportation of the system, field repair kit. Additional supporting systems as required to operate and maintain (itemize)		
	Training	Operations and maintenance for O level facility		
	Contingencies and responses to predictable events (like, what happens if there appears to be flight problem after launch; what happens if a UAV loses power; loss of telemetry, etc)	Should have Established (predetermined) plans for execution		
	Track record	Prior experience if any (accumulated flight hours for any purpose)		
	Expectations	Quick Professional technical support to address the problems		

Table 1: IITM is interested in operating UAV with the following typical specifications and requirements.

Table 2: Light weight and sufficiently small instruments to be integrated on the proposed UAV. This table gives the list and details of instruments to be included along with the UAV tender.

Parameter	Instrument	Range	Complied (Yes / No.)	Remarks / Deviation, if any
Aerosol	Condensation Particle Counter	Particle size Range : 0.01 to greater than 1 μm Concentration range : 0 to 500,000 particles/cc		
	Optical Particle Counter	Concentration range : 0 – 1 to 5 x 10 ⁵ particles/L Size range : 0.1 μm (or slightly higher) to 10 μm No. of channels: Minimum 6 , user selectable ranges		
	Aethalometer	Concentration Range: 0 - 1 mg BC/m ³ Resolution: 0.001 μg BC/m ³		
Solar Radiation	Pyranometers - 2 numbers	Spectral range : 0.3 μm (or below) to 2.8 μm (or more). Sensitivity: ~5 to 20 $\mu\text{V/W/m}^2$ Response time: < 5 s Accuracy : Higher accuracy in measurements is preferred		
	Photosynthetically Active Radiation (PAR) sensors – 2 numbers	Spectral range: 0.4 – 0.7 μm Sensitivity: Typical 5 μA per 1000 $\mu\text{mol s}^{-1} \text{m}^{-2}$. Response Time: 10 μs Accuracy : Higher accuracy in measurements is preferred		
Air Temperature and Relative Humidity	Standard probe is preferred	Range: -20 to 60°C ; 0 to 100%; Accuracy: 0.3°C; 2%		
Wind	Turbulence probe with temperature and humidity sensor.	Position and time to be logged along with wind, temperature and humidity measurements. Frequency of measurements should		

		resolve the inertial and dissipation spectral range.		
Inlet for air sampling	Isokinetic Aerosol Inlet	To be designed as per the maximum flow rates of the aerosol instruments specified above (can be designed in consultation with IITM scientists)		
Data Acquisition System	Integration of all the proposed instruments and data acquisition @ 1 to 10 Hz range at same time stamp	To be worked out by the vendor in close association with IITM scientists.		
Power	Power to scientific instruments & data logger	Vendor has to design the power cabling accordingly and also to install right kind/amount of batteries/generators.		

NAME OF THE VENDOR

SEAL AND SIGNATURE

**VENDOR PERFORMANCE STATEMENT FOR SIMILAR
DEPLOYMENTS IN THE LAST THREE YEARS**

Name of the Firm: _____

Pls note that vendors need to enclose supporting documents for the below details including satisfaction report.

Order placed by (full address of the purchaser)	Order No and date	Description and Qty of ordered equipment	Date of completion as per contract	Actual date of completion	Reasons for delay if applicable	Contact details for reference

NAME OF THE VENDOR

STAMP AND SIGNATURE

Price Bid Format

Provide the price itemize in the following format. Include additional rows and columns if required.

Item wise	Price
UAV with the required specifications (As per Table 1)	
Proposed scientific Instruments- itemized (As per Table 2) (separate rows may be included for each instrument)	
Modification and Integration of the proposed instruments	
Data Acquisition System	
Accessories and tools	
Additional UAV with similar specifications as in Table 1, but excluding Ground control station.	
Total Basic Cost	
Add : Freight / Transportation Charges if any	
Add : Tax Structure	
Add : Any other charges	
Total Cost (A)	
Basic Cost for Extended Comprehensive Warranty period of 3 years (Year wise separate price may be mentioned from 3 rd year to 5 th year)	
Add : Tax Structure	
Add : Any other charges	
Total Cost (B)	
Grand Total (A + B)	

INDIAN INSTITUTE OF TROPICAL METEOROLOGY PUNE 411 008

TERMS & CONDITIONS

ENQUIRY NO: **PS/128/10/2015**

Tender Notice No. **PS/Tender/03/2015**

- 1) The Tenderers are requested to give detailed sealed tender in their own forms in two Bids i.e.
Part – I Technical Bid.
Part - II Commercial Bid, both the bids addressed to the Director, Indian Institute of Tropical Meteorology, Dr. Homi Bhabha Road, NCL Post, Pashan, Pune – 411 008, INDIA.
- 2) This tender is not transferable.
- 3) If a request is made to IITM for Tender Documents a sum of **₹1,000/- (₹ One Thousand only) (Non-refundable)** has to be paid in the form of Demand Draft drawn in favour of “The Director, Indian Institute of Tropical Meteorology, Pune” **from Nationalized / Commercial Bank**. Otherwise tender will not be considered.

Tender documents are also available on Institute’s website, bidder can download the same. However, tender fees as mentioned above required paying along with technical bid.

- 4) Tenders addressed to the Director, Indian Institute of Tropical Meteorology, Pune 411008 are to be submitted for each item in duplicate in double cover, under two bids system. Superscribed with Tender No. **PS/128/10/2015 (Tender Notice No. PS/Tender/03/2015)** for purchase of “**Instrumented Unmanned Aerial Vehicle**” **Qty – 01 Set. due on 2nd December 2015.**
- 5) You have to submit two separate bids in two separate envelopes and you may keep both the bid envelopes in an envelope for sending to us.

One envelope will contain only the TECHNICAL SPECIFICATIONS of the indented equipment.

Another envelope will contain only the financial bid in which price and any other information, which has financial implications, will only be given.

The main envelope, which will contain both the bids, should be super scribed with our tender enquiry No.**PS/128/10/2015** due on **2nd December 2015.**

- 6) Please indicate page nos. on your quotation ex. If the quotation is containing 25 Pages, please indicate as 1/25, 2/25, 3/25 -----25/25.
- 7) Cost of the items should be mentioned clearly in the Commercial Offer (Part-II) only.
- 8) Last date for the receipt of completed tender is **up to 12:00 hrs. on 2nd December 2015 &** will be opened (Technical Bid only) on the same day **at 15:00 hrs** in the presence of the representatives of the vendors present.

- 9) The tender must be valid for a period of at least **180** days from the date of opening.
- 10) The purpose of certain specific conditions is to get or procure best Equipment / service etc. for IITM. The opinion of Technical Committee shall be guiding factor for Technical short listing.
- 11) Supplier shall finally warrant that all the stores, equipment and components supplied under the SUPPLY ORDER shall be new and of the first Quality according to the specifications and shall be free from all the defects (even concealed fault, deficiency in the design material and workmanship).
- 12) Tender must clearly indicate the features offered unit price, VAT tax, transport, transit-insurance, installation charges. Institute cannot furnish any certificate for exemption or reduction in VAT tax or any other duty/tax. The vendor should mention the price of the equipment and the duties/taxes to be paid such as customs duty/excise duty/VAT taxes etc. separately.
- 13) The complete equipment including operational manuals should be supplied within stipulated period mentioned in the supply order and the vendor should install the equipment within **one month** after the delivery of the equipment.
- 14) As this Institute is exempted from payment of Custom Duty vide NOTIFICATION NO. 51/96-CUSTOMS DATED 23 JULY 1996, Excise Duty vide NOTIFICATION NO. 10/97-CENTRAL EXCISE DT. 1ST MARCH 1997 & LBT vide No.PMC-LBT-005-0064836 AUNDH dated 16.05.2013. Exemption certificate will be issued on request.
- 15) The equipments must carry on-site standard warranty for **two years** from the date of taking over of the equipments after the acceptance tests. Warranty period will stand extended for a period of total downtime of the equipments.
- 16) The vendor has to furnish a Bank Guarantee to the extent of 10% of the order value from a nationalized / commercial bank in the prescribed format valid for the entire period of warranty including extension if any.
- 17) No advance can be paid.
- 18) The **payment terms** shall be as follows:
- i) 60% payment against delivery.
 - ii) 30% payment after satisfactory installation, and successful completion of acceptance tests and training.
 - iii) 10% payment after execution of Bank Guarantee from a Nationalized Bank and successful completion of acceptance test. The Bank Guarantee will remain valid until the expiry of warranty period including the extensions if any.

- 19) The prices quoted should be firm and irrevocable and not subject to any change whatsoever, even due to increase in cost of raw material components and fluctuation in the foreign exchange rates and excise duty.
- 20) The equipments are required to be installed at **IITM, Pune** and subsequently Training is to be provided to the concerned persons of the Institute free of charge.
- 21) Indicate the names of the Indian reputed Organizations where you have supplied the similar equipment and may attach the satisfactory performance report of the Personal Computer from user Organization.
- 22) The vendor should have supplied and deployed similar kind of Installation in govt. Institutes like IITM (research and educational). Completion certificate for the same should be enclosed.
- 23) a) If you have supplied identical or similar equipment to other Institutes under Ministry of Earth Sciences and Ministry of Science & Technology, the details of such supplies for the preceding three years should be given together with the prices eventually or finally paid.

b) Based on the above information IITM will have its option to obtain details of the equipment, their performance, after sales services etc. for evaluation of the tender, directly from the concerned Labs. /Scientists etc.
- 24) The Institute is autonomous scientific research organization under the Ministry of Earth Sciences and is a recognized center for studies leading to M.Sc. and Ph.D. of the University of Pune and various other Universities. As such, all possible concessions / discounts / rebates applicable for educational Institutions may be given.
- 25) The Tenderers / bidders are requested to quote for Educational Institutional Price for equipment, since we are eligible for the same.
- 26) Any upgrade of OS and associated other software during the warranty period should be supplied free of charge.
- 27) The vendor should have appropriate facilities and trained personnel for supply, installation and warranty-maintenance of the equipment to be supplied. Detailed information in this regard may be furnished.
- 28) Kindly attach a copy of your latest DGS&D, New Delhi registration Certificate under the compulsory Scheme of Ministry of Finance regarding the registration of Indian Agent of foreign supplier wherever it is applicable.
- 29) The Tenderer is required to furnish the Permanent Account Number (PAN) Allotted by the Income Tax Department. If registered with the National Small Industries Corporation, the registration number, purpose of registration and the validity period of registration' etc. should also be provided in Technical Bid for Indian Agents.

30) Vendor should clearly mention the following:

- **Make and model of every item quoted.**
- Delivery period.
- Company profile with a list of those institutes/users should be attached where vendor has supplied the equipments in question in past.
- A letter of AUTHORISED REPRESENTATIVE from the Principal should invariably be attached with quotation
- A copy of latest Income Tax clearance Certificate from Income Tax Department (INDIA)

31) Discount offered should be mentioned clearly in the commercial bid only.

32) LBT payment if any, the same may please be shown separately.

33) Acceptance tests to be prescribed later will be carried out after installation and the items will be taken over only after successful completion of the acceptance tests.

34) The item should be supplied with manuals and the manuals including technical / Electronic drawings / circuit diagrams should be complete in all respects to operate the system without any problem.

35) Goods should not be dispatched until the Vendor receives a firm order.

36) The Date and Time of opening for Part-II (Commercial Bid) will be intimated only to pre-qualified and technically acceptable Tenderers / bidders for the item at a later date.

37) **Earnest Money Deposit:**

- a) The Earnest Money Deposit of **₹2,00,000/- (₹ Two Lakhs only)** must be paid / sent along with your technical bid in the form of a Demand Draft, Banker cheque or Bank Guarantee from a Nationalized / Commercial Bank drawn in favour of The Director, Indian Institute of Tropical Meteorology, Pune payable at Pune, otherwise your technical & financial bids will not be considered at all. The Earnest Money of successful bidder will be returned only after installation, satisfactory demonstration and on acceptance of the equipment by the user Scientist / HOD as per the terms of our purchase order. If the successful bidder fails to fulfill the contractual obligations before the due date, he will forfeit the EMD.

The Earnest Money of the unsuccessful bidder whose technical bid has not been found suitable will be returned within **forty five days** after receipt of Technical Committee recommendations.

- b) Those who are registered with Central Purchase Organization (e.g. DGS&D), National Small Industries Corporation or the concerned Ministry / Department need not furnish EMD along with their bids.
- c) Though EMD has to be submitted by Demand Draft, Banker's Cheque or Bank Guarantee, we prefer to have Bank Guarantee for easy return to the bidders once a decision is taken by IITM. (Specimen of Bank Guarantee is enclosed at Annexure 'A').

- d) Tenders not accompanied with Demand Draft / Bank Guarantee towards "Earnest Money Deposit" will summarily be rejected.
- 38) Successful bidder is required to furnish an amount equivalent to 10% of the total order value as a '**Performance Security Deposit**' in the form of Demand Draft / Bank Guarantee from any Nationalized / Commercial Bank in favour of 'Director, IITM, Pune' within 21 days on receipt of Purchase Order.
- Performance Security should remain valid for a period of sixty days beyond the date of completion of all contractual obligation of the supplier including warranty obligation.
- 39) Part and incomplete tenders are liable to be rejected.
- 40) Conditional Offers will not be considered.
- 41) The tenders must be clearly written or typed without any cancellations / corrections or overwriting.
- 42) **Fax / E-mail / Telegraphic / Telex tenders will not be considered.**
- 43) IITM will not be responsible:
- a) For delayed / late quotations submitted / sent by Post / Courier etc.
 - b) For submission / delivery of quotations at wrong places other than the Office of Director, IITM, Pune – 411 008.
- 44) **Liquidated Damages:** If the supplier fails to Supply and Install the system as per specifications mentioned in the order within the due date, the Supplier is liable to pay liquidated damages of one percent value of the Purchase Order awarded, per every week delay subject to a maximum of 10% for every week beyond the due date and such money will be deducted from any money due or which may become due to the supplier.
- 45) In case of any dispute regarding part-shipment, non-compliance of any feature etc., the Director, Indian Institute of Tropical Meteorology, Pune will be the final authority to decide the appropriate action and it will be binding on the vendor.
- 46) Director reserves the right to reject any or all tenders without assigning any reason.
- 47) The vendor can do the site survey / work place to understand the system requirement on working days between 10:30 Hrs. to 5:00 Hrs.
- 48) The vendor must sign and stamped the duly filled Pre Contract Integrity Pact (Annexure-B) as a part of technical qualification criteria.

Note : *Technical compliance sheet may please be given in Technical Bid & Cost of the item may please be mentioned in Commercial Bid only.*

(V. R. Mali)
Scientific Officer Gr.-II
for Director
Contact No. : (020) 25904483 / 210
e-mail : vipin@tropmet.res.in

BID SECURITY 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 presents that WE _____ (*name of bank*) of (*name of the country*), having our registered office at (*address of bank*)(hereinafter called "the Bank"), are bound unto (*name of Purchaser*) (hereinafter called "the Purchaser") in the sum of _____ for which payment well and truly to be made to the said Purchaser, the Bank binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank this ___ day of 20___ THE CONDITIONS of this obligation are:

1. If the Bidder withdraws it's 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 it's 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 shall remain in force up to forty five days after the period of the bid validity, and any demand in respect thereof should reach the Bank not later than the above date.

(Signature of the Bank)
Name of Bidder.

PRE CONTRACT INTEGRITY PACT

General

This pre-bid-contract Agreement (hereinafter called the Integrity Pact) is made on _____ day of the month of _____, between, on one hand, the **Director IITM, Pune** acting through Shri _____, Designation of the officer, Ministry/ Department, Government of Indian (hereinafter called the ‘BUYER”, which expression shall mean and include, unless the context otherwise required, his successors in office and assigns) of the First Part and M/s _____ represented by Shri _____, Chief Executive Officer (hereinafter called the ‘BIDDER/Seller” which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

WHEREAS the BUYER proposes to procure (Name of the Stores/Equipment/Item) and the BIDDER /Seller is willing to offer/has offered the stores and

WHEREAS the BIDDER is private company/public company/Government undertaking/partnership/registered export agency, constituted in accordance with the relevant law in the matter and the BUYER is a Ministry/Department of the Government of India/PSU performing its functions on behalf of the President of India

NOW, THEREFORE,

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

Enabling the BUYER to obtain the desired said stores/equipment at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling BIDDERS to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and BUYER will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto agree into this Integrity Pact and agree as follows :-

Commitments of the BUYER

- 1.1 The BUYERE undertakes that no official of the BUYER, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER, either for themselves or for any person, organization or third party related to the contract in exchange for an

- advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.
- 1.2 The BUYER will, during the pre-contract stage, treat all BIDDERS alike, and will provide to all BIDDERS the same information and will not provide and such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other BIDDERS.
 - 1.3 All the officials of the Buyer will report the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.
 2. In case any such preceding misconduct on the part of such official(s) is reported by the BIDDER to the BUYER with full and verifiable facts and the same is prima facie found to be correct by the BUYER, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceeding, or any other action as deemed fit, including criminal proceedings may be initiated by the BUYER and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry I being conducted the BUYER the proceedings under the contract would not be stalled.

Commitments of BIDDERS

3. The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following :-
 - 3.1 The BIDDER will not offer directly or through intermediaries, any bribe, gift, consideration, reward, favor, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.
 - 3.2 The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration Reward, favor, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER or otherwise in procuring the Contract or forbearing to do so having done any act in relation to the obtaining or execution of the contract or any other contract with the Government for showing or forbearing to show favor or disfavor to any person in relation to the contract or any other contract with the Government.
 - 3.3* BIDDERS shall disclose the name and address of agents and representatives and Indian BIDDERS shall disclose their foreign principals or associates.

- 3.4* BIDDERS shall disclose the payments to be made by them to agents/brokers or any other intermediary, in connection with this bid/contract.
- 3.5* The BIDDER further confirms and declares to the BUYER that the BIDDER is the original manufacturer/integrator/authorized government sponsored export entity of the defense stores and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the BUYER or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.
- 3.6* The BIDDER, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the BUYER or their family members, agents, brokers or any other intermediaries in connection with the contract and the details if services agree upon for such payments.
- 3.7 The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.
- 3.8 The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.
- 3.9 The BIDDERS shall not use improperly, for purposes of competition or personal gain, or pass on to others, any information provided by the BUYER as part of the business relationship, regarding plans, technical proposals and business details, including information contains in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.
- 3.10 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.
- 3.11 The BIDDER shall not instigate or cause to instigate any third person to commit any of the action mentioned above.
- 3.12 If BIDDER or any employee of the BIDDER or person acting on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of the BUYER, or alternatively, if any relative of an officer of the BUYER has financially interested/stake in the BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filling of tender.

The term 'relative' for this purpose would be as define in Section 6 of the Companies Act 1956.

3.13 The BIDDER shall not lend to or borrow any money from or entire into any monetary dealings or transactions, directly or indirectly, with any employee of the BUYER.

4. Previous Transgression

4.1 The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify BIDDER's exclusion from the tender process.

4.2 The BIDDER agrees that if it makes incorrect statement on this subject BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

5. Earnest Money (Security Deposit)

5.1 While submitting commercial bid, the Bidder shall deposit an amount _____ (to be specified in RFP) as Earnest Money/ Security Deposit, with the BUYER through any of the following instruments:

i) Bank Draft or a Pay Order in favor of _____

ii) A confirmed guaranteed by an Indian Nationalized Bank. Promising payment of the guaranteed sum to the BUYER on demand within three working days without any demur whatsoever and without seeking any reason whatsoever. The demand for payment by the BUYER shall be treated as conclusion proof of payment.

iii) Any other mode or through any other instruments (to be specified in the RFP).

5.2 The Earnest Money/ Security Deposit shall be valid upto a period of six months or the complete conclusion of the contractual obligation to the complete satisfaction of the both the BIDDER and the BUYER, including warranty period, whichever is later.

5.3 In case of the successful BIDDER a clause would also be incorporated in the Article pertaining to performance Bond in the Purchase Contract that the provisions of Sanctions for Violation shall be applicable for forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

5.4 No interest shall be payable by the BUYER to the BIDDER on Earnest Money/Security Deposit for the period of its currency.

6. Sanction for Violations

6.1 Any breach of the aforesaid provisions by the BIDDER or any on employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitled the BUYER to take all or any one of the following actions, wherever required:

i) To immediately call off the pre contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER(s) would continue.

ii) The Earnest Money (in pre-contract stage) and/or Security Deposit/ Performance Bond (after the contract is signed) shall stand forfeited either fully or partially, as decided by the BUYER and the BUYER shall not be required to assign any reason thereof.

iii) To immediately cancel the contract. If already signed, without giving any compensation to the BIDDER.

iv) To recover all sums already paid by the BUYER, and in case of an Indian BIDDER with interest thereof at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a BIDDER from a country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the bidder from the BUYER in connection with any other contract for any other stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest.

v) To encash the advance bank guarantee and performance bond/warranty bond, if furnished by the BIDDER, in order to recover the payments, already made by the BUYER, along with interest.

vi) To cancel all or any other Contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the BUYER resulting from such cancellation/rescission and the BUYER shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.

vii) To debar the BIDDER from participating in future bidding processes of the Government of India for a minimum period of five years, which may be further extended at the discretion of the BUYER.

Viii) To recover all sums paid in violation of this Pact by BIDDER(s) to any middleman or agent or broker with a view to securing the contract.

ix) in case where irrevocable Letters of Credit have been received in respect of any contract signed by the BUYER with the BIDDER, the same shall not be opened.

(x) Forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

6.2 The BUYER will be entitled to take all or any of the actions mentioned at para 6.1 (i) to (x) of this Pact also on the Commission by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of an offence as defined in Chapter IX of the Indian Penal Code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

6.3 The decision of the BUYER to the effect that a breach of the provisions of this Pact has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the Independent Monitor(s) appointed for the purposes of this Pact.

7. Fall Clause

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

8. Independent Monitors

8.1 The BUYER has appointed Independent monitors (hereinafter referred to as Monitors) for this Pact in consultation with the Central Vigilance Commission (Names and Addresses of the Monitors to be given).

8.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.

8.3 The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.

8.4 Both the parties accept that the Monitors have the right to access all the documents relating to the project/procurement, including minutes of the meetings.

8.5 As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the BUYER.

8.6 The BIDDER(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the BUYER including that provided by the BIDDER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the BIDDER/Subcontractor(s) with confidentiality.

8.7 The BUYER will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.

8.8 The Monitor will submit a written report to the designated Authority of the BUYER/Secretary in the Department/ within 8 to 10 weeks from the date of reference or intimation to him by the BUYER / BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.

9. Facilitation of Investigation

In case of any allegation of violation of any provisions of this Pact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

10. Law and Place of Jurisdiction

This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the BUYER.

11. Other Legal Actions

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

12. Validity

12.1 The validity of this Integrity Pact shall be from date of its signing and extend upto 5 years or the complete execution of the contract to the satisfaction of both the BUYER and the BIDDER/Seller, including warranty period, whichever is later. In case BIDDER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract.

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

13. The parties hereby sign this Integrity Pact at _____ on

BUYER
Name of the Officer
Designation
Deptt./Ministry/PSU

BIDDER
CHIEF EXECUTIVE OFFICER

Witness _____

Witness _____

1. _____
2. _____

1. _____
2. _____

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