

INDIAN INSTITUTE OF TROPICAL METEOROLOGY
PASHAN, PUNE-411008 (INDIA)
(An Autonomous Body under the Ministry of Earth Sciences, Govt. of India)

TENDER NO.: PS/TENDER/02/2011

GLOBAL TENDER NOTICE

Director, Indian Institute of Tropical Meteorology, Dr.Homi Bhabha Road, Pashan, Pune- 411 008 (India) invites separate sealed tenders (Part-I – Technical Bid, Part-II – Commercial Bid) in separate sealed covers from Manufacturers / Suppliers and their accredited selling agents for the Supply, Commissioning and Installation and Satisfactory Demonstration of the following items:

“AQMS AND WALKWAY SHELTER FOR SYSTEM OF AIR POLLUTION FORECASTING AND RESEARCH FOR PUNE (SAFAR-PUNE)” - TURNKEY JOB

Last date of receipt of Tender at IITM, Pune : **30 December 2011 at 12:00 hrs.**
Opening of Tenders (Technical Bids only) : **30 December 2011 at 15:00 hrs.**

Tender documents with specifications can be obtained from Purchase and Stores Section of the Institute.

The Institute reserves the right to reject any or all tenders without assigning any reason therefore. For further details please visit our Website: www.tropmet.res.in

Senior Technical Officer-II, for Director
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SYSTEM OF AIR POLLUTION FORECASTING AND RESEARCH (SAFAR-Pune)

The Manufacturer of Ambient Air Monitoring System should have world-wide recognition of having enough field experience in designing such system to provide high quality air pollution data. The System should be designed to minimise the time spent on maintenance and calibration. During establishing SAFAR system, following criteria /features must be adopted and the manufacturers must comply the same in order to provide high quality data.

1. Since the system is to be operated & used for data collection in and around Pune for the purpose of Air Pollution Forecasting in the Pune region, it is highly desirable that the manufacturer of the prime analysers (NO_x, CO, O₃, etc.) must have enough expertise on operation and maintenance of such monitoring system & on data reporting of the pollutants. Also, the preference will be given to the manufacturer who has ISO9000 /ISO9001 /ISO17025 Quality Accreditation /NATA accreditation & has executed projects with Operation & Maintenance Contracts of Ambient Air Quality Monitoring Analysers in India. Details of such projects must be enclosed in the offer.
2. The CO, O₃, NO_x, TSP, PM₁₀ analysers, PM2.5 inlets, Gas calibrator, zero air generator, Data Acquisition Systems and Data Collection and Reporting software should preferably be manufactured by one manufacturer to provide substantial control over the quality of the system and to allow the design of the system to be best suited for application. The analysers used in the monitoring system must function efficiently in the temperature range of 2°C - 48°C as the system is to be operated in mobile module in the Pune region where expected annual range of temperature range of 4°C - 40°C.
3. An approval certification of appropriate authorities (as stated in the specifications viz. US-EPA, etc) must be enclosed as qualifying requirement for bid.
4. All analysers in the system must have technical sophistication to be connected digitally to Data Acquisition System for providing substantial advantages in communication.
5. The Data Acquisition System must have features like automatic data validation software complete with data capture percentage.
6. Analysers for the measurements of NO_x, O₃, Hg. and CO should have both RS 232, RS 422 and USB ports.
7. The Data Acquisition System should operate on Windows XP PRO/ Windows 7 Platform and be of a "Client/Server" configuration for improved reliability.
8. Real time or averaged data must be viewed quickly and easily through a remote CLIENT interface on the central computer
9. The Data Acquisition System feature calculated channels including nested calculations, vector averaging and rolling averages.
10. The System must support remote communication with full user interface from anywhere in the world via a TCP/IP network or dial up network.
11. Data Evaluation and Reporting Software must have been upgradeable to a multi-user version.

12. The Data Evaluation and Reporting Software must be able to collect and process data from a wide variety of data acquisition systems & analysers.
13. The engineer responsible for installation and commissioning of the station must provide on site training for operation, maintenance & data validation as per ISO9001/ISO17025 Quality Accreditation/ NATA accreditation procedure. This provides with hands-on experience and provides them with an understanding on how the system is integrated.
14. The manufacturer should provide the advice and services of his experts in preparing air pollution forecast if they have rendered such consultations and services in connection with Ambient Air Quality Monitoring Systems for air quality data interpretation. The experts from the company which has supplied the Air Quality Monitoring Equipments, must visit all the stations appropriately to ensure the QA and QC and that the system is performing well and providing useful data.

Note: Supplier should categorically provide detail feedback on each and every point mentioned above (Total 15) in chronicle order related to compliance (yes) /non-compliance (no) or any other explanation/justification in a tabular form.

A. SPECIFICATIONS FOR OZONE ANALYSER -10 sets		
1	General Range	User selectable and automatic
2	Concentración Range	0-1000 ppb
3	Lower Detectable Limit	≤0.5 ppb
4	Zero drift	< 1 ppb for 30 days
5	Response time	Programmable (10 s to 80 s)
6	Averaging time	Programmable (1 min to 24 hrs)
7	Internal memory	Suitable for data storage (more than 5 MB)
8	Data storage	Built in analyzer (should store 1 min average for more that 5 day)
9	Port & compatibility	RS-232 or RS-422 and Compatible with windows-XP/07
11	Power supply	230 V AC - 50 Hz
12	Manual	Instruction & operation manuals
13	Calibration unit	In Built Calibration unit with internal zero span check feature
14	Approval	US-EPA approved

B. SPECIFICATIONS FOR NO_x -ANALYSER -10 sets		
1	General Range	User selectable and automatic (NO+NO ₂ , NO _x)
2	Concentration Range	0-20 ppm
3	Lowest detectable limit	<0.4 ppb
4	Zero drift	<0.1 ppm per day
5	Response time	Programmable (30 s to 90 s)
6	Averaging time	Programmable (1 min to 24 hrs)
7	Internal memory	Suitable for data storage (more than 5 MB)
8	Data storage	Built in analyzer (should store 1 min average for more that 5 day)
9	Port & compatibility	RS-232 or RS-422 and Compatible with windows-XP/07
11	Power supply	230 V AC - 50 Hz
12	Manual	Instruction & operation manuals
13	Calibration unit	Inbuilt unit Inbuilt unit for zero gas calibration and NO _x (preferable as permeation bench)
14	Approval	US-EPA approved

C. SPECIFICATIONS FOR CO -ANALYSER -10 sets		
1	General Range	User selectable and automatic
2	Concentration range	0-200 ppm
3	Lowest detectable limit	≤0.4 ppm
4	Zero drift	<0.1 ppm per day
5	Span Drift	1% of FS per day
6	Response time	Programmable (10 s to 80 s)
7	Averaging time	Programmable (1 min to 24 hrs)
8	Internal memory	Suitable for data storage (more than 5 MB)
9	Data storage	Built in analyzer (should store 1 min average for more that 5 day)
10	Port & compatibility	RS-232 or RS-422 and Compatible with windows-XP/07
12	Power supply	230 V AC - 50 Hz
13	Manual	Instruction & operation manuals
13	Calibration unit	Inbuilt unit for zero gas calibration with solenoid valve for external span gas cylinder
14	Approval	US-EPA approved
15	OPTIONAL (Quote separately as additional cost)	Specifications for CO₂ option: Carbon dioxide measurement inbuilt in CO-analyser box Measurement range 50 to 2000 ppmv Accuracy (including repeatability, non-linearity and calibration uncertainty) ± (2 % of range + 2% of reading) Long-term stability <±5 % of range / 5 years Response time (63%) 1 minute

D. SPECIFICATIONS FOR BENZENE, TOLUENE, XYLENE ANALYSER - 10 sets		
1	General Range	0 - 100 ppb
2	Type	Gas Chromatograph with PID detector
3	Cycle	Min 15 min
4	Averaging time	Programmable (10 min to 24 hrs)
5	Internal memory	Suitable for data storage (more than one month)
6	Data storage	Built in analyzer (should store 1 min average for more that 5 day)
7	Port & compatibility	RS-232 or RS-422 and Compatible with windows-XP/07
9	Power supply	230 V AC - 50 Hz
10	Manual	Instruction & operation manuals
11	Operating software	Should be compatible with windows-XP/07
11	Calibration unit	Calibration switch for zero and span calibration unit with auto calibration or separately
12	Approval	Any International Agency certification can be provided

E. SPECIFICATIONS FOR TSP ANALYSER -10 sets		
1	General Range	TSP using Beta Gauge Absorption Principle
2	Concentration Range	0.1 $\mu\text{g}/\text{m}^3$ - 10 mg/m^3
3	Lowest detectable limit	1 $\mu\text{g}/\text{m}^3$
4	Averaging time	Programmable (1 min to 24 hrs)
5	Internal memory	Suitable for data storage (more than 5MB)
6	Data storage	Built in analyzer (should store 1 min average for more that 5 day)
7	Port & compatibility	RS-232 or RS-422 and Compatible with windows-XP/07
9	Power supply	230 V AC - 50 Hz
10	Manual	Instruction & operation manuals
11	Calibration unit	Inbuilt Calibration unit with auto calibration or separately
12	Approval	US-EPA approved. If US-EPA do not have provision for approval then that need to be specified.
13	Additional accessory	Additional Sample Inlets for PM2.5 (10 sets) also to be provided separately

F. SPECIFICATIONS FOR PM-10 ANALYSER -10 sets		
1	General Range	PM-10 using Beta Gauge Absorption Principle
2	Concentration Range	0.1 $\mu\text{g}/\text{m}^3$ - 10 mg/m^3
3	Lowest detectable limit	1 $\mu\text{g}/\text{m}^3$
4	Averaging time	Programmable (1 min to 24 hrs)
5	Internal memory	Suitable for data storage (more than 5MB)
6	Data storage	Built in analyzer (should store 1 min average for more that 5 day)
7	Port & compatibility	RS-232 or RS-422 and Compatible with windows-XP/07
9	Power supply	230 V AC - 50 Hz
10	Manual	Instruction & operation manuals
11	Calibration unit	Inbuilt Calibration unit with auto calibration or separately
12	Approval	US-EPA approved.

G. SPECIFICATIONS FOR MERCURY ANALYSER - 1 set		
1	Analyser	On-line measurement of Total Gaseous Mercury in Ambient Air, Being capable of unattended operation for extended periods
2	Mercury Collector	Gold Trap
3	Detection technique	via cold vapor atomic fluorescence spectrophotometry
4	Detection Limit	< 0.1 ng/m ³
5	Sample Volume Determination	High-precision Mass Flow Meter
6	Measuring Range	0.1 ng/m ³ to ~10000 ng/m ³
7	Linearity	2%
8	Measurement update rate	Less than 3 minutes
9	Sample cycle time	User selectable (between less than 3 minutes to 60 minutes)
10	Accessories	All required for fully operation
11	Data Output	Via RS232 to a computer (PC or Laptop to be included in quote. It should be compatible with Windows XP/7 along with licensed Office-2010)
12	Power Supply	Compatible with 230V AC - 50 Hz . If not comparable then proper branded converter should be provided for Indian power supply.
13	Calibration	Auto Calibration
14	Spares	All spare parts for 5 years of operation

H. SPECIFICATIONS FOR BLACK CARBON ANALYSER -3 sets		
1.	Technique	Filter based absorption photometer
2.	Determination of BC concentration	BC mass concentration should be derived from mass absorption cross section (MAC). For this it should be certified that provision for co-existence of light scattering particles is made to eliminate them by heating the inlet
3.	Detection limit (LOD)	~0.05 ug/m ³ at one minute averaging @0.8L/min.
4.	General Range	0.5µg/m ³ - 10 mg/m ³
5.	Temperature of the filter and light detection part	Should be maintained properly at 50C to avoid error.
6.	Flow air sample	Control by a mass flow controller.
7.	The signal to noise ratio	Very good
8.	Flow Rate	Very Low ~0.7 liter/minute
9.	Stability	High stability of Relative Humidity and heating
10.	Collection filter	Fibreglass
11.	Display	Display (LCD): 20 characters x 4 lines Shows time, Black Carbon concentration, Alarm.
12.	Power supply	Compatible with 230 V AC - 50 Hz. If not comparable then proper branded converter should be provided
13.	Port & compatibility	USB /RS-232 /RS-422 and Compatible with windows-XP/7
14.	Power supply	Compatible with 230 V AC - 50 Hz. If not comparable then proper branded converter should be provided
15.	Manual	Instruction & operation manuals
16.	Operating software	Should compatible with windows-XP /07
17.	Calibration unit and accessories	Calibration automatic and all necessary accessories like pump, heater, software with CD, etc should be supplied to make instrument operational

I. SPECIFICATIONS FOR ZERO GAS GENERATOR -10 sets		
1	Outflow Generator	1 TO 5 Liter/Minute
2	Outlet Pressure	Adjustable Between 0.1 and 6 Bar
3	Purity	>99.999%
4	Power Supply	230 V, 50Hz
5	Manual	Instruction and Operation Manual
Scrubbers		
Hopcalite		Removal of CO (<0.1 ppb)
Purafil		Removal of NO, NO ₂ , NO _x (<0.1 ppb)
Charcoal		Removal of SO ₂ , H ₂ S, Ozone (<0.1 ppb)
Molecular Sieve		Removal of H ₂ O (Dew point -15 C)
Power		220 volts AC, 50 Hz (optional 110VAC)
Pressure		Up to 200 KPA
Flow		0-9 LMP

J. SPECIFICATIONS FOR MULTI POINT GAS CALIBRATOR (MGC) -10 sets

1	Power Supply	230 V; 50 Hz
2	Weight	< 20 Kg
3	Pressure	Ajustable Between 0.1 and 6 Bar
4	Dilution	From High Concentration Span Gas to Diluted Gas using Mass Flow Controller
5	Manual	Instruction and Operation Manual
6	Calibration Gases, Cylinders & Regulator	Cylinder of Capacity 10 liter with SS Regulator and single cylinder for all the calibration gases. Separate cylinders for NO _x , CO and BTX must be provided for each station (Total 30 numbers or more as required).

K. Specifications for Automatic Weather Station (AWS) = 11 Nos.**1. Data Logger**

Provision for storing and archiving the data from all sensors through software to central AQMS server in desired format

2. Wind Speed Sensors:

Range: 0 to 125 mph

Resolution: better than 0.1 mph

Accuracy: ± 1 mph

3. Wind direction

Range: 0 to 360°

Resolution: better than 0.1 %

Accuracy: $\pm 3\%$

Starting threshold: 1.2 mph

4. Temperature

Range: -40° to 60° C

Resolution: better than 1° F

Accuracy: $\pm 1^\circ$ F

5. Relative Humidity

Range: 0 to 100 % RH

Accuracy: $\pm 3\%$ or less

6. Pyrradiometer

Spectral Sensitivity: 0.3 to $>30\ \mu\text{m}$

Azimuth response: < 5% of the value
Cosine response: < 5% of the value, zenith angle 0° to 80°
Response time: < 25 sec (95%), < 45 sec (99%)
Measuring range: 0-1500 W/m ²
Resolution: < 1 Wm ²
Stability: < 3% per year (temporary operation)
Temperature effect: < 2% of the value between 20°C to + 40°C
Linearity: < 2% in the range 0.5-1330 Wm ²
Impedance: About 190 ohm/receiver plate
Output: About 15 μV/W/m ²
Ambient temperature:-40°C to 60°C
Novalynx or equivalent
7. Rain Gauge
Resolution: 0.02 inches/tip
Accuracy: ± 4 %
Max rate: Unlimited
Carrying Case: Size: 20" X 17" X 8"
8. Tripod /stand with mounting rod:
Height 36" (with mast 8') or as per standard IMD norms.
9. Note: All SIM recurring rental and Modem charges must be borne by vendor. Ten (10) numbers of AWSs will be mounted along with AQMS and can be combined with AQMS software and data logger but the remaining one AWS should be mounted independently at the central station where no AQMS station is planned. Hence, appropriate provision for independent installation, data handling and storage should be kept with data acquisition system and data ports.

L. SPECIFICATIONS FOR LOCAL AND CENTRAL DATA ACQUISITION, CONTROL SYSTEM & REMOTE NETWORKING

1	GPRS /3G Modems as required. Please note that no internet connectivity will be available in all 10 remote stations. However, internet facility will be provided by IITM at the central station at IITM.
2	GPRS /3G networking with minimum memory to store all the local station data for the period of 6 months,with capability of acquiring real time and store data from local station to centralization by GPRS /3G network with software for the data analysis and visualization.

LOCAL STATIONS: 10

1. Should connect through RS232 and USB communication ports.
2. Should able to transmit data and /remote control via modem/GSM network.
3. Should provide GUI windows based application software for continuous air monitoring.
4. Should provide calibration windows for analyzer calibration from computer.
5. Main window for real time display major parameters & status of all analyzers & sensors.
6. Control panel window for control of each analyzer.
7. Real time status and diagnostics for maintenance people.
8. Programmable down loading of data.
9. Should provide data storage capacity for at least 3 years.

CENTRAL STATIONS: 2

1. The software should have all advance features to enable remote automatic data collection from each station and should provide full control over data loggers from anywhere including real time viewing, status and diagnostic information.
2. Data communication and acquisition system should handle the data transmission /reception from 10 different monitoring stations of an ambient air quality network, receive incoming messages / signals from remote site. **In addition** to this it should also provide the similar connectivity and data control and transmission of 10 different automatic weather station data which are being installed there independently.
3. Central station software should manage 10 remote air quality-monitoring stations and equal numbers of AWS.
4. Should provide data management, analysis and reporting.
5. Should compatible with Windows-XP/ Windows 7 or higher version
6. Should provide data storage capacity for at least 2 years.
7. The remote control ability on the client server model as such should look and realize exactly the same when used from a remote location as it does when used on site. It should be a separate process that is independent of what is being displayed on the logger.
8. Multiple clients should be able to connect to the server from different locations at a time to allow remote computer to view the data being logged in real time.
9. The costumized software interface program should be provided which can store and transmit the data in the real unit as well as in AQI format (mathematical formula will be provided by IITM) to FTP as well as Display servers in the format (probably in ‘cvs’) as per the requirement of display company. This need to be updated every 30 minutes to 1 hour in real time.
10. This software as well as standard data acquisition software should be maintained

regularly and should have enough licences to load in real and proxy servers.

(a) Configuration of remote data acquisition machine -10 numbers

- **PROCESSOR:** 2nd Generation Intel® Core™ i5-2400 Processor (3.10GHz,6MB) or higher
- **Chipset:** Intel(R) Q67 Express Chipset
- **OPERATING SYSTEM:** Genuine Windows(R) 7 Professional 64bit (English)
- **MICROSOFT SOFTWARE:** Licensed Microsoft(R) Office Starter 2010
- **DISPLAY:** 17in HAS Wide Monitor, VGA/DVI
- **MEMORY:** 4GB (2x2GB) Non-ECC DDR3 1333MHz SDRAM Memory
- **HARD DRIVE (PRIMARY):** 1TB 7200 RPM 3.5" SATA Hard Drive
- **OPTICAL DRIVE:** 16X Max DVD-ROM Drive
- **KEYBOARD:** USB Keyboard
- **MOUSE:** USB MOUSE with PADS
- **CARD READER:** 19-in-1 Media Card reader
- **SOFTWARES and SYSTEM RECOVERY:** Windows(R) 7 Professional 64bit Media Kit (Multi-Language).
- **USB Ports:** Total 4; **Multimedia:** Multimedia Speaker with MIC

(b) Configuration of central data acquisition machine/workstation = 2 Numbers

Same as above with **21.5** inches TFT flat monitor (instead of 17")

(c) Configuration of FTP server = 2 Numbers

Same as above with **21.5** inches TFT flat monitor (instead of 17") and additional LINUX OS

(d) Portable backup DAS system = 1 (One) number

- MacBook Air 256GB or eqv.
- 1.7GHz dual-core Intel Core i5 processor with 3MB shared L3 cache. Configurable to dual-core 1.8GHz Intel Core i7 with 4MB shared L3 cache
- 4GB memory of 1333MHz DDR3 onboard memory, 256GB flash storage' Intel HD Graphics 3000
- 13.3-inch (diagonal) high-resolution LED-backlit glossy widescreen display with support for 2Processor
- Size and Weight: *Height:* 0.11-0.68 inch; *Width:* 12.8 inches; *Depth:* 8.94 inches; *Weight:* 1.35 kg
- Intel HD Graphics 3000 processor with 384MB of DDR3 SDRAM shared with main memory
- FaceTime camera: Dual display and video mirroring
- Connections and Expansion: Two USB 2.0 ports, Thunderbolt port, headphone port, MagSafe power port, SD card slot (13-inch model).
- Battery and Power: Advanced lithium-polymer battery with MagSafe power adapter: Wireless web: Up to 7 hours, 50-watt-hour; 45W MagSafe Power Adapter with cable management system; MagSafe power port
- Wi-Fi: 802.11n Wi-Fi wireless networking; IEEE 802.11a/b/g compatible
- Bluetooth: Bluetooth 4.0 wireless technology
- Audio: Stereo speakers, microphone, and headphone.
- Softwares: (1) OS X Lion: Includes Mail, Address Book, iCal, the Mac App Store, iTunes, Safari, Time Machine, FaceTime, Photo Booth, Mission Control, Launchpad, AirDrop, Resume, Auto Save, Versions, Quick Look, Spotlight, QuickTime, and more.; (2) Lion Recovery: OS X Lion includes a built-in set of tools for repairing your Mac in the Lion Recovery, a new feature that lets you repair disks or reinstall OS X Lion without a physical disc; (3) iWork

- Other accessories: (1) AirPort and Wireless: Apple USB Ethernet Adapter (USB 2.0 with bus power, 10/100BASE-T (RJ-45 connector); (2) Apple Magic Mouse: Multi touch technology

(e) Permanent backup DAS System = 1 (One) number

- iMAC an all-in-one design for a small footprint. 27-inch (viewable) LED-backlit glossy widescreen TFT display with support for millions of colours; Resolution: 2560x1440 pixels
- Processor: 3.1GHz quad-core Intel Core i5 with 6MB on-chip shared L3 cache Configurable to 3.4GHz quad-core Intel Core i7
- 4GB (two 2GB) memory
- 1TB (7200 rpm) HDD
- AMD Radeon HD 6970M graphics processor with 1GB of GDDR5 mem
- Full-size keyboard with 78 (US) or 79 (ISO) keys, including 12 function keys and 4 arrow keys (inverted “T” arrangement)
- Magic Mouse: Smooth, seamless Multi-Touch surface with support for simple gestures (scrolling and swiping).
- Magic Trackpad: Solid-state scrolling trackpad for precise cursor control;
- Wireless: Latest Wi-Fi and Bluetooth technologies.
- Wi-Fi: 802.11n Wi-Fi wireless networking;² IEEE 802.11a/b/g compatible
- Bluetooth: Bluetooth 2.1 + EDR (Enhanced Data Rate) wireless technology
- OS X: iTunes, Time Machine, Quick Look, Spaces, Spotlight, Dashboard, Mail, iChat, Safari, Address Book, QuickTime, iCal, DVD Player, Photo Booth, Front Row, Xcode Developer Tools and more. OS X Lion installed,
- iLife: Includes iPhoto, iMovie and GarageBand.
- Built-in FaceTime HD camera; built-in stereo speakers, built-in microphone and headphone mini-jack.
- Connections and Expansion: SuperDrive, SDXC card slot, audio in, audio out, USB 2.0, FireWire 800, Thunderbolt, Gigab Input, Ethernet.

M. SPECIFICATIONS FOR UPS /AIR CONDITIONER /RACK	
1	Supply and commissioning of online Branded UPS With Minimum 4 Hour Battery Backup For all analyzer and accessories of adequate capacity to be provided (10 sets -1 for each station) with wiring and all necessary electrical work
2.	Supply and commissioning of online 5 KVA Branded UPS With Minimum 4 Hour Battery Backup for Central Station to be connected to all central station servers and room displays with wiring and all necessary electrical work (1 Number only)
3.	Supply and commissioning of Branded Air Conditioner System split type of two ton capacity for all AQMS stations and central station with wiring and all necessary electrical work (2 units each) (hence total 22 units)
4.	Supply and commissioning of standard mounting rack to accommodate all analyzers and necessary accessories (cylinders, calibrator, etc) with sample handling moisture removal manifold system, power distribution board, exhaust /cooling, dust filter, telescopic poles, etc.

N. WALKWAY SHELTER for AQMS of SAFAR-PUNE
Total Number = 11 (Eleven)

Sr. No.	Description	Specification
1a	Material of construction (Outside)	Mild Steel 1.2 mm thickness with pre-coated paint only
1b.	Material of Construction (Inside)	Marine ply with laminate (12 mm) Boiled Water Resistance Quality
2	Size of Shelter	4 mtr (L) x 3.5 mtr (W) x 2.7mtr (H)
3	Door	One main door for Entrance/Exit with proper night latch locks
4	Door Size	900mm (W) x 2000mm (H) with toughened glass
5	Partition	Separate Compartment for locating UPS & Batteries to be provided
6	Wall Thickness	80 mm with Rockwool/ Glasswool
7	Roof Thickness	100 mm with Rockwool/ Glasswool
8	Base Frame	Made of ISMC 100 Channel with 50mmx50mmx4mm Angle
9	Floor MOC	Plywood of 12mm thickness, on GI sheet of 2 mm thick
10	Flooring	Vinyl sheet pasted on plywood (1.5 mm thick)
11	Paint shade, design and title	Green paint with SAFAR-IITM logo drawing on front and tree sketch on other sites as per the instructions. An SS name plate of size 15"x10" (inches) with given matter graving.
12	Hook	I-Hook shall be provided on all the four corner to lift the shelter
13	Window	Two numbers shall be provided- Double glass vacuum type
14	Illumination	4 Nos tube light - Inside shelter (250-300 Lux at working level), 4 Nos bulk head light - Outside shelter with all electric connections
15	Canopy	Minimum 600mm (W) or more shall be provided at main door and windows to completely protect from rain water
16	Inside separation	Sliding arrangement shall be provided
17	Roof Design	Shall be design to take load of Four persons
18	Floor Design	Shall be design to take load of 100 KG/Square ft
19	Application	Outdoor
20	Location	In & around Pune District
21	Ambient Condition	Temp:Min 2°C; Max 50°C
22	Other amenities in shelter	One Computer table (4'x3') with 3 computer chairs (armed and full back) (Standard Brand Godrej or eqv.)
23.	Civil Work	Specify as per your specification.

24.	CMC	For 5 years including all parts and consumables (remember that shelter is already under free warranty for 1 year)
25.	Additional Civil Work	Quote separately for barricading with RPC pole, barbed wiring and CS exit gate around the shelter.
Note:	1.Three Holes at top shall be provided for Entry of Gas/Dust Sample tubes	
	2.At bottom there shall be holes for Cable & Drain Tube Entry/exit	

O. OMC (OPERATIONAL AND MAINTENANCE CONTRACT) FOR AQMS & WALKWAY SHELTERS

Total Comprehensive Operational and Maintenance Contract (OMC) for 5 years for all set of analyzers including complete manned operation and managing stations and supply of the data to central station with remote handling. Supplier should quote for the comprehensive Operational maintenance contract (OMC) for a total period of 5 years. It is understood that as per the practice, there should be a total Comprehensive Maintenance Contract (CMC) for initial one year free of cost. Hence, only the man power cost should be included in 1st year.

This OMC should be included for complete system of this tender for uninterrupted operation of all AQMS stations, analysers, walkway shelters, AWS, all accessories and related components–

- All consumable; spare parts; recurring expenses viz. GPRS /3G SIM tariff, and regular maintenance for uninterrupted operation (24x7), etc for all stations.
- Stationing ONE dedicated trained supervisor /engineer in **control room** at IITM to take care of regular supervision related to maintenance, calibration and all **hardware** related issues for all stations of SAFAR-PUNE.
- Stationing of ONE dedicated trained software expert in **control room** of IITM for all **software** related issues and regular monitoring of data transfer to FTP /display servers, conversion to AQI and all other features, data handling and analysis, report preparations as desired by IITM..(Persons should be present on all working days (in case or emergency as an when required) as per IITM calendar for the entire duration of the OMC)
- **Additional Staff:** In addition to the above, quote for additional operational staff /engineer adequate for proper maintenance, calibration, operation and data handling of all the 10 stations along with central station (it is envisaged that services of at least 4 additional engineers may be required to strictly follow the OMC guidelines but additional staff is purely as per vendor's judgement)

These OMC staff will maintain all instruments, manage all consumable, keep it up to date and carry out the complete operational analysis at all 10 different stations (spread around 50 km radius within Pune and surrounding areas) on routine basis. Quote separately for each year. All instruments should remain operational at least 90% of the time in a year and should not remain non-functional continuously for more than 5 days in general. In case of non-compliance, penalty will be charged which may include 2-5% of total OMC amount per day or extension of OMC period (as decided by IITM). The instrument should be commissioned, regularized and operational after the order is executed without any additional facility and cost to IITM excepting the infrastructure facility viz. space for erecting displays, furnished laboratory space in control room and 230V standard Indian power supply.

INDIAN INSTITUTE OF TROPICAL METEOROLOGY PUNE 411 008 (INDIA)

GENERAL TERMS & CONDITIONS

ENQUIRY NO: PS/125/117/2011/

TENDER NOTICE No.: PS/TENDER/02/201

- 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) 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, maintenance, AMC, CMC, OMC etc. and any other information, which has financial implications, will only be given.

- 3) 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.
- 4) The main envelope, which will contain both the bids, should be super scribed with our tender enquiry No.**PS/125/117/2011** due on **30 December 2011**.
- 5) The technical bids will be opened on the specified due date in the presence of tenderers who wish to be present & the financial bids of only those bidders will be opened whose technical bid is found suitable by us.
- 6) The Date and Time of opening for Part-II (Commercial Bid) will be intimated only to pre-qualified and technically acceptable Tenderers for the item at a later date.

Last Date and Time for receipt of Tenders: **Upto 12.00 hrs. on 30 December 2011.**

Date and Time of opening of Tenders: **At 15:00 hrs. on 30 December 2011.**
(Part-I Technical Bids only)

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/125/117/2011** for purchase of **“AQMS AND WALKWAY SHELTER FOR SYSTEM OF AIR POLLUTION FORECASTING AND RESEARCH FOR PUNE (SAFAR-PUNE)” (TURNKEY JOB)** due on **30 December 2011**.

- 7) This tender is **not transferable**.
- 8) **Fax / E-mail / Telegraphic / Telex tenders will not be considered**

- 9) If a request is made to IITM, Pune for Tender Documents, a sum of **Rs.1,000.00 (Rs. One Thousand only)** for indigenous suppliers / Indian agents (Non-refundable) and **USD 50.00 (USD Fifty only)** for foreign suppliers (Non- refundable) has to be paid in the form of Demand Draft only drawn in favour of **The Director, Indian Institute of Tropical Meteorology, Pune** enclosed in Technical Bid only. In case the bidders download the Tender Documents from the website of this Institute, **no tender document fee is require to be submitted.**
- 10)a) The Equipments are required for **IITM, Pune** and to be installed in and around **PUNE (INDIA) at different locations** and subsequently Training is to be provided to the concerned scientists / personnels of IITM, Pune.
b) Packing, Forwarding, Freight & Insurance and Commissioning Charges, if any extra may be quoted separately in Commercial Bid.
c) In case if your quote is FOR/FOB basis, estimated Insurance coverage charges may please be indicated.
d) CIF, Mumbai value both by Airfreight.
e) Octroi Payment if any, the same may please be shown separately.
- 11) Cost of the items should be mentioned clearly in the Commercial Bid (Part-II) only. The optional and any other essential items / accessories required for the maintenance of the equipment for the next five years should also be specified in the offer separately.
- 12) In case of foreign quote, the Principal supplier should clearly indicate the address of the Indian Agent and percentage (%) of Agency Commission payable if any, to be paid to the Indian Agent in Indian Currency. If Agency Commission is not applicable, the same may kindly be mentioned clearly in the offer.
- 13) Percentage & amount of Indian Agency commission payable in Indian currency after the receipt of consignment in good condition at our Stores & satisfactory installation and commissioning of the ordered equipment on submission of copy of DGS&D registration wherever it is applicable.
- 14) Indicate the names of the Indian reputed Organizations where you have supplied the similar equipment and may attach the satisfactory performance report of the equipment from user Organization.
- 15)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.
- 16) All the Bank Charges inside and outside India, including opening of LC, communication, confirmation, amendments etc., if any to Beneficiary's Account only. This may please be noted.**
- 17) Details of services rendered by you as well as after-sales services offered by you are to be made clear in the tender.

- 18) The Tenderer's conditions printed on the tender or otherwise sent along with the tender shall not be binding on IITM.
- 19) The vendor should have appropriate facilities and trained personnel for supply, installation, commissioning and warranty-maintenance of the equipment to be supplied. Detailed information in this regard may be furnished.
- 20) **Delivery Period:** As time is the essence of the contract, Delivery period mentioned in the Purchase Order should be strictly adhered to.
- 21) Details regarding terms of payment including period of warranty. However we prefer to release the payment on BILL Basis (excluding Indian Agency Commission) after receipt of consignment in good condition and satisfactory installation, and commissioning thereof. Alternatively, depending upon the value and foreign exchange regulations the payment can also be considered through Sight Draft / Letter of Credit through the State Bank of India for the order value excluding the Indian Agency Commission. However, the detailed payment for Sight Draft / Letter of Credit is mentioned at clause No. **30 (b), (c) & (d)** of this tender terms and conditions.
- 22) Supply means "Supply, Installation, Commissioning and satisfactory demonstration of the whole system and training". If any charges extra for Installation, Commissioning and training, the same should be specified in the commercial offer.
- 23) 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.
- 24) a) 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.
- b) A copy of latest Income Tax Clearance Certificate from Income Tax Department (INDIA) for Indian Agents.
- 25) In case of foreign quote, the address of Principal's / Manufacturer's and their Banker's details should be furnished.
- 26) 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.
- 27) The import license is covered under OGL policy of 2009-2014.
- 28) a) In case of Indigenous Items the offer should contain the Basic Price and percentage of Excise Duty should be shown separately, since IITM, Pune is exempted from payment of Excise duty vide Govt. Notification No.10/97-Central Excise dated 15t March, 1997.

- b) IITM is exempted from payment of Customs Duty vide Govt. Notification No.51/96-Customs dated 23rd July, 1996. However as per the Govt. of India further notification No.24/2002-Customs dated 15th March, 2002 and notification No.19/2006-Customs' dt. 01.03.2006 Customs Duty is levied on all imports meant for IITM. Since the suppliers are requested to quote only on FOB basis, applicable freight, insurance and customs duty to R&D Institutions will be borne by IITM.
- 29) Tender must clearly indicate the features offered unit price, VAT tax, transport, transit insurance, installation charges. Institute cannot furnish any concessional certificate for exemption or reduction in VAT tax or any other duty / tax except mentioned above at 28 a) and b). 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.
- 30) a) No advance can be paid.
- b) **PAYMENT: 80%** payment shall be made by Sight Draft / an Irrevocable Letter of Credit established in favour of the supplier through the State Bank of India, Main Branch, Camp, Pune 411 001 (India) for the order value, excluding the Agency Commission due to the Indian Agents, against the presentation of original Shipping documents, **10%** payment shall be released after completion of satisfactory installation, commissioning, demonstration of the whole system, after imparting training and Balance **10%** will be released upon receipt of Bank Guarantee from Indian nationalized bank for 10% of total Order value towards performance bank guarantee to be valid for one year from the date of installation. However Letter of Credit/Sight Draft arrangement will be made for 100% order value.
The Agency Commission to the Indian Agent will be paid only after successful installation, commissioning and satisfactory demonstration and acceptance of the items ordered for by the end user.
- c) For Indigenous items, **80%** payment shall be made against delivery of indigenous goods, **10%** payment shall be released after completion of installation, commissioning and on acceptance test as per Purchase Order at site and balance **10%** shall be made after receipt of performance Bank Guarantee from Indian nationalized bank for 10% of the total order value, to be valid for entire period of warranty including extension if any. If no Bank Guarantee is given, the balance 10% will be paid after assessing, after sales service during warranty period i.e. payment after warranty period.
- d) To ensure due performance of the contract, the successful bidder has to furnish the Performance Security in the form of bank guarantee for **10%** of the Order value from the Indian nationalized bank before execution of ordered work but not later than 15 days from the date of receipt of the Purchase Order. The same will be returned to the successful bidder only after completion of satisfactory installation, commissioning, demonstration of the whole system.
- 31) 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.
- 32) 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.

- 33) **INSTALLATION:** Bidder shall be responsible for installation / demonstration wherever applicable and for after sales service during the warranty and thereafter.
- 34) 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.
- 35) The tenders must be clearly written or typed without any cancellations / corrections or overwriting.
- 36) The tenders will be received in the Institute till **30 December 2011** up to **12:00 hrs.** and shall be opened on **30 December 2011** at **15:00 hrs.** in presence of the tenderers or their authorized agents who wish to be present.
- 37) 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 ,
- 38) In case of Foreign Quote, the mode of dispatch should be by Air Post Parcel/Ocean Freight/Air Freight (By Air India Freight) and on Freight to-pay basis only. The approximate dimensions of the packages and weight of consignment are to be indicated.
- 39) 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.
- 40) The Technical Bid should accompany with complete specification, Manufacturer's name, address and relevant Technical Literature/Brochures with Warranty Terms.
- 41) 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.
- 42) The tender / quotation / offer submitted by you should be valid for a minimum period of **One Hundred Eighty (180) days** from the date of opening the tender.
- 43) The quotation should be only in Indian Rupees for indigenous items. In case of foreign quote, the vendors may quote their rates in, Indian Rupees as well as in Foreign Currency.
- 44) The bidder who submits the tender on behalf of their principals should produce documentary evidence in support of their authority to quote or submit proforma invoice of their principals.
- 45) Installation demonstration to be arranged by the supplier free of cost and the same is to be done within 15 days of the arrival of the equipment at site after site readiness.
- 46) IITM will not provide any accommodation/transportation for the Engineers/ Representatives for attending Installation, Commissioning and Demonstration Work. It is the absolute responsibility of the Principal Supplier/Indian Agent to make their own arrangements.

47) **WARRANTY/GUARANTEE:**

- (a) Please see the complete detail in OMC Clause of tender document.
 - (b) The equipment should be guaranteed for trouble free performance during OMC period after installation. Supplier shall finally warrant that all the stores, equipment and components supplied under the ORDER shall be new and of the first quality according to the specifications and shall be free from the defects (even concealed fault, deficiency in the design material and workmanship). The defects, if any, during the guarantee period are to be rectified free of charge by arranging free replacement wherever necessary. Further, the technical specifications and requirements may also be verified.
 - (c) Instrument should remain operational at least 90% of the time in a year and should not remain non-functional continuously for more than **5 days**. In case of non-compliance a penalty of 2-5% of the total OMC amount or the OMC period will be extended proportionately. The instrument should be commissioned, regularized and operational after the order is executed without any additional facility and cost to IITM excepting the infrastructure which includes well furnished laboratory space with 230V standard Indian power supply. **Warranty period will stand extended for a period of total downtime of the equipment.**
- 48) Details of onsite warranty, agency that shall maintain during warranty and undertake Operational Comprehensive Service Maintenance Contract (OMC) beyond warranty shall be given in the offer. In case of foreign quote, the Indian Agent who shall maintain during warranty and AMC / OMC beyond warranty shall be given in the Technical Offer. After warranty period (post warranty) who will maintain equipment / instrument. Indicate the name of Firm, address, contact person, phone no. And fax no. etc in your technical bid.
- 49) The supply of spare parts is to be guaranteed at least for a period of 10 years after the supply of the equipment.
- 50) Please mention that during warranty period who will maintain system/ equipment / instrument. Indicate the name of firm, address, contact person, phone no. and fax no. etc in your technical bid.
- 51) After successful installation what will be the minimum down time of equipment/instrument in case of breakdown. If the identified firm or person fails to put the system into working condition what is the further alternative course of action suggested by you to adhere to minimum down time.
- 52) Kindly mention the charges separately for shifting of AQMS stations from IITM, Pune to their respective destinations in **commercial bid** (for post warranty period).
- 53) No sub-contracting will be allowed for installation or maintaining system/ equipment / instrument during or after warranty period.
- 54) You have to quote rates for AMC / OMC, if any, only in commercial bid.
- 55) Any upgrade in Operating System (OS) and associated other software during the warranty period should be supplied free of charge.

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

57) The Tenderers are requested to quote for Educational Institutional Prices for Equipment and Software, since we are eligible for the same.

58) This Institute is an autonomous scientific research organization under the Ministry of Earth Sciences and is a recognized centre 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.

59)a) The Earnest Money Deposit of **Rs.20,00,000.00 (Rs. Twenty 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 Indian Nationalized Bank only) 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, commissioning, 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 to 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.

65)a) Tenders, which are submitted without following the Two-Bid Offer System, will summarily be rejected.

b) Unsigned Tenders will also be rejected.

c) Part and incomplete tenders are liable to be rejected.

66) If the supplier fails to Supply, Install and Commission 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.

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

- 68)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.
- 69)Firms which have already supplied similar equipment to IITM and have not completed required installation / commissioning / after sales service / warranty replacements etc. such firms' offers will not be considered for further evaluation and no enquiries thereafter will be entertained.**
- 70)In the event the Manufacturer / Supplier proposes for amalgamation, acquisition or sale of its business to any firm during the contract period, the Buyer/Successor of the Principal Company are liable for execution of the contract and also fulfillment of contractual obligations i.e. supply, installation, commissioning, warranty, maintenance/replacement of spares accessories etc. with the same cost / ordered value while submitting your bid, you may confirm this condition.**
- 71)Conditional Offers will not be considered.
- 72)All disputes are subject to exclusive jurisdiction of Competent Court and Forum in Pune, India only.
- 73)The Director, Indian Institute of Tropical Meteorology, Pune 411 008, India reserves the right to accept any tender in full or in part or to reject the lowest or any or all tenders without assigning any reason.
- 74)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.
- 75) Last Date and Time for receipt of Tenders: Up to 12.00 hrs. on 30 December 2011.**
- 76) Date and Time of opening of Tenders: At 15:00 hrs. on 30 December 2011.**
(Part - I Technical Bid only)

(V. R. MALI)
Senior Technical Officer-II
For Director
Email: vipin@tropmet.res.in
Tel: ++91-20-25894483

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 one year 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.